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AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SYDNEY SESSION, 1898.

A Short Dichotomous Key to the hitherto known Species of Eucalyptus,

BY

J. G. LUEHMANN, F.L.S.

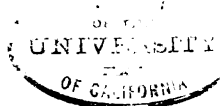
(Curator, National Herbarium, Melbourne).

*Read before the Australasian Association for the Advancement of Science,
January, 1898.*

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A SHORT DICHOTOMOUS KEY TO THE HITHERTO KNOWN SPECIES OF EUCALYPTUS.

By J. G. LUEHMANN, F.L.S. (Curator, National Herbarium,
Melbourne.)

*(Read before the Australasian Association for the Advancement of Science,
Tuesday, January 11, 1898.)*

THE scheme herewith laid before the members of the Association, to classify the species of the genus *Eucalyptus* according to the fruits, is not, I may state at the outset, meant to supersede the excellent anther-system introduced by Bentham; the latter being in my opinion the most reliable which, with our present knowledge, can be devised. Frequently, however, when specimens are gathered, expanded flowers, or even well-advanced buds, are not available, while nearly every adult tree bears fruits as well as young flower-buds, and in most cases, though not in all, the species can by their aid and that of the leaves be determined with tolerable accuracy. The present arrangement should, therefore, be looked upon as devised to act as an auxiliary guide only, without any full descriptions, and is for this reason submitted in the form of a key. The primary character chosen is that of the fruit-valves, whether quite enclosed or whether the points protrude beyond the rim, or whether the top of the fruit is convex with every part raised above the rim; secondarily, the shape and size of the fruit are taken into consideration. De Candolle's classification, based on the shape of the operculum, is relied upon for further sectional divisions. While the majority of the species are without difficulty assigned to their respective divisions, there are others which form a transit and, in these cases doubts will arise, especially when we consider their remarkable variability. Even with complete material I have sometimes found it difficult to fix the limits of a species, although I devoted a great deal of time to the study to the genus while assisting the late Baron von Mueller in the elaboration of his *Eucalyptographia*, for which I worked up the very extensive material that had accumulated since the publication of the third volume of the *Flora Australiensis*. This mutability of form is well illustrated by the fact that a dozen kinds, raised from Australian seeds, have been described as new species in Europe and America by botanists of repute, although it seems improbable that they would receive seeds of a single species that had not already come under Baron von Mueller's notice. While

sometimes even a minor character appears to be constant, and affords a pretty sure clue to the identification of a species, in other cases characters that in most plants would be considered of the greatest importance will be found unreliable in Eucalypts. Thus it is also with the bark, which, though generally such a good guide, varies in some instances to a remarkable degree. This is well exemplified by *Eucalyptus viminalis*; this tree, which grows around the Melbourne herbarium building, shows here, in its sapling state, a smooth, whitish bark, until it attains a diameter of from 4 to 6 inches, then gradually the outer layers remain attached, at first near the base only, becoming rough and brown; as the plant gets older, these layers creep higher and higher up the stem, until, in aged trees, the whole of the trunk and also the larger branches are covered with a thick, rugged, dark brown bark. Within 10 miles inland from Melbourne, already the tree changes its character in this respect, inasmuch as only the lower part of the stem is covered with this rugged bark, while another 10 miles further towards the ranges, this species presents a smooth, white trunk, except, perhaps, just near the ground. Although the floral characters remain the same, yet, any one seeing only the two extreme forms would certainly consider them two distinct species. *Euc. leucoxylon* shows similar anomalies. As another instance of the difficulty of arriving at a correct limitation of the species of *Eucalyptus*, I may mention the fact that Bentham wrote that after he had finished his description of all the species of this genus for the *Flora Australiensis*, he considered it necessary to re-examine the whole of the collections, a thing which, for want of time, he did not do with any other group of plants. There is one feature which will, probably, throw more light upon the limits of species as well as their affinities, with which we are not yet sufficiently acquainted; this is the character of the seedlings. I venture to express a hope that in the near future one of our botanic gardens will undertake the investigation of this subject, which requires not only great knowledge and care, but also certain means that are only at the command of few people.

In submitting this contribution to Australian botany, I trust that with all its shortcomings it will prove of some service in identifying the species of our most important genus of timber trees.

No.		No.
	Calyx four-toothed	1
	Calyx truncate	2
	(No. 5, <i>E. tetraptera</i> shows an approach to a four-toothed calyx.)	

1. Fruit fully $\frac{1}{2}$ inch long, *E. tetradonta*.
Fruit under $\frac{1}{2}$ inch long, *E. odontocarpa*.
(Probably a variety of the above.)

No.		No.
2.	Stamens united in four bundles	3
	(This character is generally also discernible in the fruit by four depressions where the stamens had been inserted.)	
	Stamens free and inserted all around the inside of the calyx	5
3.	Fruit more than 1 inch in diameter, convex above the rim of the calyx, <i>E. erythrocorys</i> .	
	Fruit less than 1 inch in diameter, the valves enclosed	4
4.	Leaves mostly opposite, ovate-lanceolate, mealy-white, <i>E. tetragona</i> .	
	Leaves scattered, lanceolate-falcate, dull green, <i>E. eudesmioides</i> .	
5.	Fruit quadrangular, about $1\frac{1}{2}$ inches long, reddish, <i>E. tetraptera</i> .	
	Fruit terete or irregularly angular	6
6.	Fruit-valves quite enclosed in the capsule	7
	Fruit-valves either quite exerted or the points reaching the level of the rim	64
7.	Flowers mostly paniculated	8
	Flowers in simple umbels	35
	(Occasionally the inflorescence will appear paniculated in this section through the falling off of the leaves.)	
8.	Leaves mostly opposite	9
	Leaves scattered	13
9.	Leaves connate	10
	Leaves not connate	11
10.	Leaves about 6 inches long, 3 inches broad, <i>E. perfoliata</i> (allied to No. 31, <i>E. corymbosa</i>).	
	Leaves not exceeding 2 inches in length, <i>E. gamophylla</i> .	
11.	Leaves mostly ovate, not exceeding 2 inches in length	12
	Leaves lanceolate, at least 3 inches long	13
12.	Calyx bristly, <i>E. setosa</i> .	
	Calyx glabrous, <i>E. aspera</i> .	
13.	Fruit $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter, <i>E. ferruginea</i> .	
	Fruit not exceeding $\frac{1}{3}$ inch in diameter, <i>E. clavigera</i> . (<i>E. grandifolia</i> and <i>E. Papuana</i> are varieties of this.)	
14.	Leaves mostly peltate, <i>E. peltata</i> .	
	Leaves attached to the stalks at the base	15
15.	Leaves of equal colour on both sides	16
	(See also Nos. 31 and 34.)	
	Leaves paler beneath than above	24
16.	Fruit at least $\frac{1}{3}$ inch in diameter, more or less urceolate	17
	Fruit rarely exceeding $\frac{1}{4}$ inch	19



No.		No.
17.	Flowers and fruits sessile, <i>E. eximia</i> . Flowers and fruits pedicellate	18
18.	Leaves lanceolate, operculum double, <i>E. maculata</i> (this includes as varieties <i>E. citriodora</i> and <i>E. melissiodora</i>). Leaves ovate, operculum single, <i>E. latifolia</i> .	
19.	Leaves from orbicular to ovate, <i>E. polyanthema</i> . (<i>E. populifolia</i> , which sometimes has the valves barely exerted, is readily distinguished by the dark, shining leaves, those of <i>E. polyanthema</i> being quite dull and greyish-green.)	
	Leaves from lanceolate-falcate to ovate-lanceolate ...	20
20.	Operculum conical, <i>E. hemiphloia</i> . (This includes <i>E. albens</i> as a mealy-white variety, and probably, also, <i>E. Bowmani</i> , described from insufficient material.)	
	Operculum hemispherical, rarely shortly conical ...	21
21.	Leaves ovate-lanceolate	22
	Leaves lanceolate	23
22.	Fruit truncate-ovate, about 2 lines long, <i>E. Behriana</i> . Fruit urceolate, 1 line long, <i>E. brachyandra</i> .	
23.	Leaf-veins very oblique, not numerous, anastomosing, <i>E. largiflorens</i> (= <i>E. bicolor</i> , Cunn.). Leaf-veins very diverging, numerous, hardly anastomosing, <i>E. tessellaris</i> .	
24.	Fruit with eight prominent longitudinal ridges, over 1 inch long, <i>E. ptychocarpa</i> . Fruit without prominent ridges	25
25.	Branchlets with ferrugineous hairs, <i>E. Torelliana</i> . Branchlets glabrous	26
26.	Fruit urceolate	27
	Fruit ovate or globose-truncate	33
27.	Fruit not exceeding 4 lines in length, <i>E. trachyphloia</i> . Fruit over $\frac{1}{2}$ inch long	28
28.	Operculum broader than the calyx, <i>E. Watsoniana</i> . Operculum not broader than the calyx	29
29.	Fruit under 1 inch in diameter	30
	Fruit exceeding 1 inch in diameter	32
30.	Peduncles stout, pedicels none, <i>E. Abergiana</i> . Peduncles slender, flowers pedicellate	31
31.	Leaves lanceolate, <i>E. corymbosa</i> . (Including as varieties <i>E. terminalis</i> , <i>E. dichromophloia</i> , and <i>E. pyrophora</i> , as I find it impossible to draw a clear line of demarcation; the specimens from the dry interior and from the north-west have the leaves frequently of equal colour on both sides, and the fruits are occasionally rather ovate-truncate than urceolate.)	

Leaves very large, ovate, *E. Foelscheana*.

No.		No.
32.	Flowers white, rarely pink; seeds very large, black, not winged, <i>E. calophylla</i> .	
	Flowers red; seeds brown, winged, <i>E. ficifolia</i> .	
33.	Fruit truncate-globular, sessile, <i>E. Howittiana</i> .	
	Fruit truncate-ovate, pedicellate	34
34.	Operculum depressed-hemispherical, <i>E. Cloeziana</i> .	
	Operculum more or less conical, <i>E. paniculata</i> .	
	(The variety <i>fasciculosa</i> from the dry north-west of Victoria differs in having the leaves of equal colour on both sides and the bark of the trunk smooth.)	
35.	Fruit two-celled, <i>E. phoenicea</i> .	
	Fruit with three or more cells	36
36.	Fruit nearly 2 inches long, <i>E. miniata</i> .	
	Fruit not exceeding 1 inch	37
37.	Operculum projecting beyond the rim of the calyx ...	38
	Operculum not broader than the calyx	39
38.	Leaves somewhat paler beneath, <i>E. corynocalyx</i> .	
	Leaves of equal colour on both sides, <i>E. urnigera</i> .	
39.	Leaves opposite	40
	Leaves scattered	41
40.	Leaves orbicular, <i>E. Kruseana</i> .	
	Leaves lanceolate, <i>E. doratoxylon</i> .	
41.	Leaves with several longitudinal veins almost parallel with the midrib	42
	Leaves with the veins all more or less diverging from the midrib	43
42.	Operculum conical, leaves rather small, <i>E. stellulata</i> .	
	Operculum hemispherical, leaves large, <i>E. coriacea</i> (= <i>E. pauciflora</i>).	
43.	Leaves much paler beneath, <i>E. diversicolor</i> .	
	(Occasionally cultivated under the name of <i>E. colossea</i> . <i>E.</i> <i>marginata</i> has the valves sometimes enclosed, and is then distinguished from <i>E. diversicolor</i> by the conical operculum.)	
	Leaves of equal colour on both sides or nearly so ...	44
44.	Pedicels elongated	45
	Pedicels short or none	47
45.	Operculum hemispherical, <i>E. sepulcralis</i> .	
	Operculum conical	46
46.	Leaf-veins very spreading, <i>E. longifolia</i> .	
	Leaf-veins very oblique <i>E. leucoxylon</i>	
47.	Fertile seeds membranously winged, <i>E. Todtiana</i> .	
	Fertile seeds not winged	48

No.		No.
48.	Fruit much contracted at the orifice, nearly globular Fruits but slightly or not at all contracted	49 50
49.	Fruits nearly 1 inch in diameter, <i>E. buprestium</i> . Fruits about $\frac{1}{4}$ inch in diameter, <i>E. piperita</i> . (Some specimens from near Port Jackson have almost urceolate fruits, but seem gradually to pass into the other form.)	
50.	Fruits nearly 1 inch in diameter, <i>E. Planchoniana</i> . Fruits rarely exceeding $\frac{1}{2}$ inch... ..	51
51.	Peduncles mostly recurved	52
	Peduncles erect... ..	53
52.	Operculum conical, <i>E. decurva</i> . Operculum hemispherical, <i>E. Cooperiana</i> .	
53.	Base of the calyx as well as of the operculum abruptly dilated into a furrowed ring, <i>E. torquata</i> . Base of calyx and operculum without these dilatations	54
54.	Peduncles short and thick, usually much flattened, <i>E. incrassata</i> . (An extremely variable species; <i>E. dumosa</i> seems to pass into it by almost imperceptible degrees, although it can generally be distinguished by smaller flowers and fruits and less flattened peduncles. <i>E. grossa</i> , which is the same as <i>E. pachypoda</i> , appears to be also a variety with blunt, but rather long, operculum. See also No. 138, <i>E. goniantha</i> .)	
	Peduncles nearly terete, mostly slender	55
55.	Calyx angular	56
	Calyx terete	57
56.	Fruit about $\frac{1}{4}$ inch long, <i>E. gracilis</i> . Fruit about $\frac{1}{2}$ inch long, <i>E. ochrophloia</i> . (Perhaps a variety of the above).	
57.	Calyx and operculum granular—rough	58
	Calyx and operculum smooth	60
58.	Large tree, with fibrous bark; leaves mostly very inequilateral, <i>E. obliqua</i> . (Sometimes cultivated under the name of <i>E. fissilis</i> .)	
	Shrubs or small trees with smooth bark	59
59.	Leaves rather small, nearly straight, <i>E. stricta</i> . (This is the typical <i>E. stricta</i> of Sieber, well described in Mueller's <i>Eucalyptographia</i> , with reniform anthers. Benthams, in <i>Flora Austr.</i> III, 217, apparently had a mixture of two species before him, describing the fruit of <i>E. stricta</i> , but the anthers of another species.)	

No

No.

Leaves large, falcate ; umbels generally enclosed in large bracts while in bud, *E. virgata*.

(Although I believe that Baron von Mueller was correct in including this also as a variety in *E. stricta*, yet I have kept it distinct as the appearance of the extreme forms is so very different. Both seem confined to the south-eastern parts of New South Wales. Bentham had also in this case a mixture before him, viz., a few specimens of the genuine *E. virgata*, but mostly those of a large tree allied to *E. haemastoma*, afterwards described by F. v. Mueller as *E. Sieberiana*. *E. obtusiflora* seems to have been described by De Candolle from imperfect material ; an original leaf and a sketch of the specimen point, perhaps, to *E. haemastoma*, but a second leaf is quite different. The name had better be discarded.)

60. Leaves nearly straight, very shining, *E. foecupda*.

(Includes *E. loxophleba* as a variety.)

Leaves falcate, inequilateral, dull green or hardly shining 61

61. Fruits about $\frac{1}{2}$ inch in diameter, *E. patens*.

Fruits not exceeding $\frac{1}{3}$ inch 62

62. Fruit generally 5 or 6 celled, *E. Bosistoana*.

Fruit mostly 4-celled 63

63. Fruit truncate-ovate, *E. odorata*.

Fruit truncate-globular, *E. melliodora*.

(When in flower *E. melliodora* is readily distinguished by the outer stamens being sterile. In Mueller's *Eucalyptographia* the anthers are not correctly drawn ; they open by terminal pores.)

64. Flowers generally paniculated 65

Flowers mostly in simple umbels 74

65. Leaves distinctly paler beneath, *E. Raveretiana*.

Leaves of equal colour on both sides 66

66. Leaves opposite 67

Leaves scattered 68

67. Fruit truncate-ovate, about 4 lines long (a box-tree) *E. pruinosa*.

Fruit truncate-globular, 2 or 3 lines long (an ironbark tree), *E. melanophloia*.

68. Leaves ovate, or orbicular 69

Leaves lanceolate 70

69. Calyx about 3 lines in diameter, *E. oligantha*.

Calyx under 2 lines in diameter, *E. populifolia*.

70. Operculum about 3 lines long, *E. siderophloia*.

Operculum not exceeding 2 lines 71



No.	No
71. Fruit-valves much exserted, <i>E. microtheca</i> . (As pointed out already by Baron von Mueller, in his <i>Eucalyptographia</i> , Turczaninow's <i>E. brachypoda</i> , to which Mr. Bentham referred this, must be some other species, probably an aberrant form of a known plant.) Fruit-valves level with, or hardly projecting beyond the rim	72
72. Fruit 3 to 4 lines in diameter, <i>E. drepanophylla</i> . (Includes as a variety <i>E. leptophleba</i> .) Fruit not exceeding 2 lines	73
73. Leaves linear-lanceolate, <i>E. crebra</i> . Leaves ovate-lanceolate, lemon-scented, <i>E. Staigeriana</i>	
74. Fruits 2 inches in diameter	75
Fruits not exceeding 1 inch	76
75. Leaves opposite, <i>E. macrocarpa</i> . Leaves scattered, <i>E. pyriformis</i> .	
76. Leaves paler beneath	77
Leaves of equal colour on both sides	86
77. Operculum broader than the calyx, <i>E. robusta</i> . Operculum not exceeding the calyx	78
78. Calyx angular, <i>E. botryoides</i> . Calyx terete	79
79. Fruit $\frac{1}{2}$ inch or more in diameter	80
Fruit under $\frac{1}{2}$ inch in diameter	81
80. Fruit-valves very short, hardly exserted, <i>E. marginata</i> . Fruit-valves long, much exserted, <i>E. pallita</i> . (Perhaps a variety of <i>E. resinifera</i> .)	
81. Operculum longer than the calyx tube, <i>E. resinifera</i> . Operculum shorter than the calyx tube	82
82. Leaves much paler beneath, the lateral veins numerous and very spreading	83
Leaves slightly paler beneath, the lateral veins not very close and moderately spreading	84
83. Pedicels very short, or none, <i>E. saligna</i> . Pedicels elongated, <i>E. microcorys</i> .	
84. Fruit broadest at the orifice ; fertile seeds much larger than the sterile ones	84A
Fruit contracted at the orifice ; fertile seeds not much larger than the sterile ones... ..	85
84A. Operculum hemispherical ; fruits small, <i>E. propinqua</i> . Operculum bluntly conical, <i>E. punctata</i> .	

No.		No.
85.	Fruit about four lines in diameter, rim thick, <i>E. pilularis</i> . Fruit not exceeding three lines, rim thin, <i>E. acmenoides</i> (= <i>E. triantha</i> in Mueller's Census).	
86.	Leaves mostly opposite. (See also No. 138, <i>E. dealbata</i> .) Leaves scattered	87 91
87.	Fruit about 1 inch in diameter, top-shaped, <i>E. Preissiana</i> . Fruit rarely exceeding $\frac{1}{2}$ inch, truncate-ovate ...	88
88.	Leaves connate, <i>E. Perriniana</i> . Leaves not connate (except sometimes in <i>E. Risdoni</i>)	89
89.	Leaves with crenulated margin, <i>E. cordata</i> . Leaves with entire margin	90
90.	Leaves obtuse, ovate or almost orbicular, <i>E. pulverulenta</i> . (This includes <i>E. cinerea</i> as a variety.) Leaves acute, ovate, <i>E. Risdoni</i> . (Sometimes the leaves are connate, while in age they occasionally become alternate, and assume a lanceolate form, verging towards <i>E. amygdalina</i> , with which the plant was combined by F. v. Mueller as a variety.)	
91.	Flowers and fruits on long, slender pedicels, fruits rather large Flowers and fruits on short pedicels or sessile (except sometimes <i>E. Maidenii</i>)	92 93
92.	Fruit top-shaped, filaments red, <i>E. erythronema</i> (= <i>E. conoidea</i>). Fruit truncate-ovate, filaments whitish, <i>E. caesia</i> .	
93.	Operculum much broader than the calyx, <i>E. gomphocephala</i> . Operculum not or slightly broader than the calyx ...	94
94.	Calyx and operculum warty Calyx and operculum smooth or rough, but not warty	95 96
95.	Leaves lanceolate, <i>E. globulus</i> . Leaves ovate, <i>E. alpina</i> .	
96.	Leaves not over 1 inch long, <i>E. vernicosa</i> . Leaves much exceeding 1 inch	97
97.	Stamens straight in the bud. (See also No. 140, <i>E. tereticornis</i>) Stamens bent inward in the bud	98 101
98.	Fruits of the umbel connate into one mass, <i>E. Lehmanni</i> (included in <i>E. cornuta</i> by F. v. Mueller). Fruits free	99
99.	Fruit-valves ending in long, fine points, <i>E. cornuta</i> . (including as a variety <i>E. annulata</i> .) Fruit-valves short	100



No.		No.
100.	Leaves lanceolate, <i>E. occidentalis</i> . (including <i>E. macrandra</i> and <i>E. spathulata</i> as varieties.) Leaves ovate, <i>E. platypus</i> . (Baron von Mueller adopted in his Eucalyptographia Turczaninow's name of <i>E. obcordata</i> , which appellation seems to me quite misleading and has no claim to priority.)	
101.	Fruit from $\frac{1}{2}$ to 1 inch in diameter	102
	Fruit mostly under $\frac{1}{2}$ inch	105
102.	Top of fruit nearly flat	103
	Top of fruit convex	104
103.	Leaves shining, <i>E. megacarpa</i> . Leaves dull, very coriaceous, <i>E. cosmophylla</i> .	
104.	Calyx terete, <i>E. Oldfieldi</i> . (<i>E. Drummondi</i> seems a variety of this, being smaller in all its parts.) Calyx angular, <i>E. pachyphylla</i> .	
105.	Leaves ovate, but acute, rarely ovate-lanceolate, <i>E. alba</i> . (<i>E. platyphylla</i> I cannot distinguish from this, even as a variety.) Leaves lanceolate, rarely linear	106
106.	Calyx and operculum strongly ribbed	107
	Calyx and operculum not ribbed	109
107.	Operculum quite hemispherical, <i>E. corrugata</i> . Operculum elongated	108
108.	Operculum obtuse, <i>E. goniantha</i> . Operculum pointed, <i>E. falcata</i> .	
109.	Calyx angular, pedicels flattened, <i>E. goniocalyx</i> . Calyx and pedicels terete	110
110.	Fruit-valves ending in fine points	111
	Fruit-valves short, often deltoid	114
111.	Capsule raised above the rim	112
	Capsule inserted below the rim	113
112.	Operculum conical, flowers closely sessile <i>E. decipiens</i> Operculum hemispherical, <i>E. pallidifolia</i> .	
113.	Leaves generally dull greyish-green, <i>E. oleosa</i> . Leaves shining on both sides, <i>E. salmonophloia</i> .	
114.	Capsule inserted below the rim of the calyx or on a level with it	115
	Capsule raised above the rim	131
115.	Leaves linear, <i>E. angustissima</i> . (See also No. 130 <i>E. amygdalina</i> .) Leaves lanceolate.	116
116.	Fruit urceolate, <i>E. Baileyana</i> . Fruit mostly ovate-truncate, never urceolate	117



DICHOTOMOUS KEY TO THE EUCALYPTUS.

11

- | No. | No. |
|--|------------|
| 117. Pedicels very slender, at least three times as long as the calyx, <i>E. leptopoda</i> .
Pedicels short | 118 |
| 118. Operculum conical or acuminate, longer than the calyx
Operculum hemispherical, mostly blunt, usually shorter than the calyx | 119
120 |
| 119. Flowers shortly pedicellate, <i>E. redunca</i> .
Flowers sessile, <i>E. concolor</i> . | |
| 120. Leaf-veins fine, numerous, very divergent | 121 |
| Leaf-veins not numerous, very oblique | 122 |
| 121. Stamens of expanded flowers, straight, <i>E. cneorifolia</i> .
Stamens of expanded flowers bent inwards about the middle, <i>E. uncinata</i> .
(<i>E. micranthera</i> is a variety of this.) | |
| 122. Peduncles conspicuously flattened near the top, <i>E. salubris</i> .
Peduncles nearly or quite terete | 123
124 |
| 123. Leaves under 3 inches long | 124 |
| Leaves mostly over 3 inches long | 125 |
| 124. Fruit almost flat on top, <i>E. coccifera</i> .
Capsule somewhat sunk below the narrow rim, <i>E. Gunnii</i> (typical.) | |
| 125. Fruit topshaped, leaves somewhat undulate, <i>E. Gunnii</i> , var.
(I doubt whether Baron Von Mueller was correct in including this tree in <i>E. Gunnii</i> as a variety in his Eucalyptographia, where the main figure represents it. Benthams description of <i>E. Stuartiana</i> refers partly to this. Perhaps it will be necessary to distinguish it as a separate species, and the name of <i>E. undulata</i> would not be inappropriate.)
Fruit ovate or globose, truncate | 126
127 |
| 126. Rim of fruit narrow, the valves inserted somewhat below it | 127 |
| Rim of fruit rather broad and flat | 128 |
| 127. Flowers generally 3 in an umbel, <i>E. Bauerleni</i> .
(The real affinity is with <i>E. viminalis</i> .)
Flowers more than 3 in an umbel, <i>E. eugenoides</i> .
(The real affinity is with <i>E. piperita</i> .) | |
| 128. Leaves very pale, bark of stem hard and rugged, <i>E. Sieberiana</i> .
Leaves green, bark of stem smooth or fibrous | 129
130 |
| 129. Fruit ovate-truncate, top of fruit reddish, <i>E. haemastoma</i> .
Fruite globose, truncate or shortly ovate | 130 |
| 130. Leaves rather small, their oildots large and not very numerous; stem-bark fibrous, <i>E. amygdalina</i> .
(<i>E. dives</i> is an aberrant form of this. There is a variety in Tasmania with linear leaves.) | |

No.		No
	Leaves large, their oildots very fine and numerous ; stem-bark fibrous only near the base, <i>E. regnans</i> . (Probably correctly included in <i>E. amygdalina</i> as a variety by Bentham and Mueller.)	
131.	Leaves small, thick, hardly inequilateral, <i>E. santalifolia</i> . (Includes <i>E. pachyloma</i>).	
	Leaves mostly large, inequilateral	132
132.	Stems of young plants and offshoots quite quadrangular, with opposite ovate bluish-white leaves, <i>E. Maidenii</i> . (I find the above the most striking character in this remarkable species. The typical specimens have rather numerous flowers in an umbel, clavate and smooth in bud, with hemispherical but pointed operculum, and a rather long flattened peduncle. But there are forms, especially specimens collected in Gippsland by Mr. A. W. Howitt, that show an unmistakable approach to <i>E. globulus</i> , which in its ordinary form has such a different appearance. In other respects there is an evident affinity with <i>E. gonicalyx</i> . All three species have in their young state quadrangular stems and bluish leaves ; the adult leaves are also somewhat similar in shape and texture. In my opinion, there are weighty reasons against the assumption that we have here a case of hybridisation, but must rather ascribe it to evolution.)	
	Stems of young plants nearly terete... ..	133
133.	Veins of leaves very oblique	134
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137.	Operculum nearly hemispherical or shortly and bluntly conical	138
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138.	Leaves green, alternate, <i>E. Stuartiana</i> . (Distinguished from <i>E. viminalis</i> when the latter has more than three flowers in an umbel by the fibrous bark and roundish seedling leaves, <i>E. viminalis</i> having either a smooth or a rugged but never fibrous bark and lanceolate seedling leaves.)	
	Leaves ashy-grey, sometimes opposite, <i>E. dealbata</i> .	
139.	Operculum mostly ending in a beak, <i>E. rostrata</i> . (Some varieties have a blunt operculum and form a connecting link between this and <i>E. tereticornis</i> . <i>E. exserta</i> is a variety.)	
	Operculum conical, not beaked	140

- No. 140. Bark smooth ; fruit almost globose through the broad ascending rim, *E. tereticornis*.
 Bark rough ; rim of fruit only slightly ascending, *E. rudis*.

E. orbifolia and *E. patellaris*, enumerated in the "*Flora Australiensis*," I have omitted, as they have in my opinion been described from too imperfect material to make their recognition at all certain ; also *E. Lansdowniana*, F. v. Mueller and J. E. Brown, as I have neither a specimen nor the description, and as Professor Tate, who has seen the plant, informs me that he does not consider it a tenable species. Nor could I take cognisance of supposed new species described in recent years from cultivated plants in Europe and America, as it seems inconceivable that seeds of a number of new species should have been sent away while the trees remained unknown to Australian botanists.

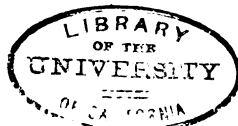
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IN ERROR to the Supreme Court of the State of California.

This suit, which was commenced April 5, 1879, arises out of an Act of the Legislature of California, approved March 23, 1876, entitled "An Act to authorize the widening of Dupont Street, in the city of San Francisco." An assessment was made to meet the cost incurred in its execution. Provision was made in the Act to issue and sell bonds to meet such cost in the first instance, and for the levy of an annual tax on the lands benefited, in proportion to benefits, to pay the interest on the bonds, and to create a sinking fund for the payment of the principal debt. Bonds, dated January 1, 1876, to the amount of \$1,000,000, were issued in the name of the City and County of San Francisco, and made payable to the holder, in gold coin of the United States, twenty years after date, with interest, payable half yearly, at the rate of 7 per cent per annum. The bonds recited that they were issued under the above Act; were to be paid out of the fund raised by taxation, as therein provided; and were taken by the holder subject to the conditions expressed in its twenty-second section, to be hereafter referred to. They were signed by the Mayor, Auditor, and County Surveyor, and attested by the official seal of the city and county. The plaintiffs in error, who were the plaintiffs below, being owners of lots or parcels of land within the district subject to the assessment, and claiming that the statute was unconstitutional and void, brought this suit to obtain a decree perpetually enjoining the defendant in error, Tax Collector of the City and County of San Francisco, from selling their property under the assessment. Holders of the bonds, to a large amount, intervened, and were made defendants. The Court of original jurisdiction—the Superior Court of the City and County of San Francisco—rendered a decree giving the relief asked. Upon appeal to the Supreme Court of California that decree was reversed, and the cause remanded, with directions to dissolve the injunction and dismiss the complaint.

The statute in question contains many provisions. The first section provides that, subject to the provisions of the Act, Dupont Street, in San Francisco, should be increased to the uniform width of seventy-four feet (measuring westerly from its then easterly line) from the northerly line of Market Street to the southerly line of Filbert Street, the grades of the intersecting cross streets to be adjusted by the Board of Supervisors, so as to make them conform to the grade of the west line of Dupont Street to be established by the Board of Supervisors, which was empowered to pass all necessary orders for that purpose.

The second section provides that the value of the land taken for the widening of the street, and the damages to improvements thereon or adjacent thereto, which may be injured thereby, and all expenses whatsoever incident to such widening, "shall be held to be the cost of widening such street, and shall be assessed upon the district hereinafter described as benefited by said widening, in the manner hereinafter provided." The district declared to be benefited, and upon which the cost of making the improvement was directed to be assessed, is defined in the Act, and it was provided that, in case Dupont Street be not widened farther north than Bush Street, then the districts to be benefited "shall be bounded on the north by the southerly line of Bush Street, and on the south by the northerly line of Market Street." (Section 3.) The majority in value of the property owners fronting on Dupont Street, between Market and Bush Streets, were allowed to defeat the proposed improvement between those streets, and to relieve that portion of the assessment district from any burden on account of it, by filing a written protest at any time within thirty days after the notice provided for in section 6 of the Act, to be presently referred to. No such protest was filed. The Act also provided that, unless within that time a majority of property owners fronting on Dupont Street, between Bush and Filbert Streets, should petition for it, there should be no widening north of Bush Street, and that portion of the assessment district should be excluded. No such petition was filed, and the widening was limited to the four blocks between Market and Bush Streets. (Section 12.)

The Mayor and Auditor of the City and County of San Francisco, together with the City and County Surveyor, and their successors in office, were constituted a "Board of Dupont Street Commissioners," the Mayor to be ex officio President of the Board. (Section 4.) The Board of Supervisors of the city and county were authorized, if they deemed it expedient that Dupont Street be widened in the mode prescribed, to express such judgment by resolution or order within sixty days after the passage of the Act, and if they failed to do so no further proceedings were to be had or taken under the Act, for any purpose, and the street was not to be widened. (Section 21.) As soon as convenient after the passage of such a resolution or order by the Board of Supervisors, the Dupont Street Commissioners were directed to "publish a notice, for not less than ten days, in two of the daily papers printed in the city of San Francisco, informing property owners along the line of said street that the Board is organized, and inviting all persons interested in property sought to be taken, or which would be injured by said widening, to present to the Board maps and plans of their respective lots, and a written statement of the nature of their claim and interest in such lots." (Section 6.) The Board of Commissioners, having prepared and adopted suitable maps, plans, and diagrams, were required to ascertain and determine and separately state in a written report, to be signed by at least a majority of its members, the description and actual cash value of the several lots and subdivisions of land and buildings included in the land taken for the widening of Dupont Street, and the damage done to the property along the line of the street, specifying and describing in their report each lot and subdivision or piece of property taken or injured by the widening of the street, as far as an accurate description thereof was furnished by the owners, and setting down against each lot, subdivision, or piece of property, the

names of the owners, occupants, and claimants thereof, or of the persons interested therein, as lessees, incumbrancers, or otherwise, and the particulars of their interest, as far as they could be ascertained, and the amount of value or damage determined upon for the same, respectively. If, in any case, the Board found that conflicting claims of title existed, or were in ignorance or doubt as to the ownership of any lot of land, or of any interest therein, the lot was to be set down as belonging to unknown owners.

The Board was also directed to embody, in a written report, a description of the subdivisions or lots of land included in the districts designated in Section 3 of the Act, and to set against each lot or subdivision the amount in which, according to the judgment of the Board, such lot will be benefited by reason of the widening of the street, relatively to the benefits accruing to other lots of land within the designated districts; also setting against each lot or subdivision the names of the owners, lessees, and claimants thereof, so far as the same can be ascertained conveniently, and, if not ascertained, setting them down to unknown owners. Error, however, in the designation of the owner or owners of any lot taken or assessed was not to affect the validity of the assessment. Suitable maps, plans, or diagrams, showing the property taken and assessed for the improvement, in lots and subdivisions, with the names of the owners, lessees, and claimants, as far as known to said Board, were to be attached to the report. "Such report," the Act provided, "as soon as the same is completed, shall be left at the office of said Board daily, during ordinary business hours, for thirty days, for the free inspection of all parties interested, and notice that the same is so open for inspection for such time and at such place shall be published by said Board daily, for twenty days, in two daily newspapers printed and published in said city and county." (Section 7.)

Any person interested in any piece or parcel of land situated within the district defined and described in Section 3 of the Act, or in any of the lands taken for Dupont Street, or in any improvements damaged by the opening of that street, feeling himself aggrieved by the action or determination of the Board, as shown in its report, was entitled, at any time within the thirty days mentioned in Section 7 of the Act, to apply by petition to the County Court of the City and County of San Francisco, setting forth his interest in the proceedings had before the Board, and his objections thereto, for an order requiring it to file with that Court its report, and such other documents or data as may be pertinent thereto, in its custody and used by it in preparing the report. Said Court is hereby authorized and empowered to hear said petition, and shall set the same down for a hearing within ten days from the date of the filing thereof; and the party filing said petition shall, on the day he files the same, serve a copy thereof on at least one of the members of the Board of Commissioners; and said Board may appear by counsel, or otherwise, before said Court in response to said petition. Said Board may file a written answer to said petition with said Court. Testimony may be taken by said Court upon said hearing, and the process of the Court may be used to compel the attendance of witnesses and the production of books or papers or maps in the custody of said Board, or otherwise.

It shall be in the discretion of said Court, after hearing and considering said application, to allow said order or deny the same; and if granted, a copy thereof shall be served on said Board, and it shall proceed to obey the same according to the terms of the order, to be prescribed by the Court. But in case no such petition shall be filed with said County Court within the time above limited for the filing thereof, the said report shall be presented by the said Board to the said County Court, with a petition to the Court that the same be approved and confirmed by the Court. The Court shall have power to approve and confirm said report, or refer the same back to said Board, with directions to alter or modify the same in the particulars specified by the Court in the order referring the same back, and thereupon the said Board shall proceed to make the alterations and modifications specified in the order of said Court. The alterations and modifications aforesaid being made, the report shall be again submitted to the said Court, and if the Court, upon examination, shall find that the alterations and modifications have been made according to the directions contained in said order, the said Court shall approve and confirm the same by an order, to be entered on its minutes; but if the said Board shall have neglected or failed to make the alterations and modifications set forth in the order of reference, the Court may again refer the report back to said Board, and so on, until its original order of alteration and modification shall have been complied with by said Board, and the said Court shall then approve and confirm said report. (Section 8.)

All damages, costs, and expenses arising from, or incidental to, the widening of the street, being fixed and determined by the final confirmation of the report, as in the Act provided, the Board was to issue bonds of the City and County of San Francisco, in such form as they might prescribe, in sums of not less than \$1,000 each, for such an amount as shall be necessary to pay and discharge all such damages, costs, and expenses; the bonds to be known and designated as the "Dupont Street Bonds," and payable in twenty years from their date, unless sooner redeemed, as in the Act provided, bearing interest at 7 per cent per annum, payable semi-annually at the office of the Treasurer of the city and county, such interest being evidenced by coupons attached to each bond and signed by the President of the Board. (Section 9.)

Any person or persons to whom damages were awarded, according to the provisions of the Act, upon tendering to the Board a satisfactory deed of conveyance to the city and county of the land for which damages were so awarded, was entitled to have bonds in an amount equal to the sum of the damages awarded for the lands so conveyed, together with damages for the improvements thereon, or affected thereby; and the bonds so issued and delivered were to be in full compensation for all damages for lands and improvements taken and improvements injured, as contemplated in the Act. (Section 10.)

The Mayor, Auditor, and Treasurer were authorized to sell bonds sufficient to realize money enough to meet and discharge all expenses and damages arising from the widening of the street, established by the report as finally confirmed. The money arising from their sale was to be known and designated as the "Dupont Street Fund."

As soon as the bonds were converted into money, as in the Act provided, the Board of Commissioners were required to give public notice, in two daily newspapers published in the city and county, for at least ten days, that they were prepared to pay in full all damages and liabilities fixed by the final report of the Board (not then already discharged); and upon receiving from the parties entitled thereto, the proper deeds or proper acquittances from those entitled to compensation, the Board were to give to such party an order upon the treasury for the amount shown to be due, payable out of the "Dupont Street Fund." (Section 11.)

Provision was made by the Act for the levy and collection annually, at the same time and in the same manner as other taxes are levied and collected in the city and county, of taxes upon the lands described in the third section, sufficient to pay the interest on the bonds as it matured, and also sufficient to raise one twentieth of the principal, and to constitute a sinking fund for the redemption of the bonds; such taxes to be collected out of the land only, to be adjusted and distributed according to the enhanced values of the lands as fixed in the final report of the Board, and to go into the hands of the Treasurer of the city and county, as part of the "Dupont Street Fund." (Section 13.)

It was made the duty of the Board of Commissioners to cause block books to be prepared, exhibiting the district declared by the Act to be benefited by the opening of Dupont Street, according to the blocks or fractional parts of blocks thereof, and the subdivisions, according to which the benefits were fixed and determined; also, in convenient book form, descriptions of the several subdivisions shown on such books—the amount of benefits or enhanced value to the subdivision, as established by the confirmed report, by reason of the opening of the street, being set opposite to each description of the several subdivisions. The block books and description note books, being certified by the Board, were to be held by the Assessor of the City and County of San Francisco as a part of the records of his office, until all the bonds issued in pursuance of the Act were redeemed. (Section 14.)

In case any person, to whom, or in whose favor, damages were awarded by the Board, should fail or neglect, for the period of twenty days after there were funds to the credit of the "Dupont Street Fund" sufficient to pay such damages, to ask for and receive from the Board a warrant for the sum so awarded, it could draw a warrant upon the Treasurer in favor of such owner or owners, and deposit the same with the Clerk of the city and county, accompanied by a certificate of the Treasurer that the warrant so drawn and deposited had been registered by him, and that there are funds in his hands to pay the same; and thereupon the Board, on demand, was entitled to an order of the County Court authorizing it to enter upon such piece of land and remove obstructions therefrom, and to throw open the lots so described as part of the street, and an execution could issue to the Sheriff, commanding him to put the Board in possession of such lot for the city and county; and thereafter, upon delivering to the County Court a sufficient deed conveying said lot of land to the said city and county, the party so dispossessed was entitled to receive the value of the land so conveyed, or the warrant of the Board therefor. (Section 16.)

If the owners of any lands taken for the street failed or neglected, within the space of thirty days after the money was in the treasury to pay the same, to remove the buildings and improvements from such lands, and deliver possession of said lands to said Board, on tender to them, respectively, of the sums awarded as the value of such lands, buildings, or improvements, then the Board could, at any time thereafter, sell such buildings and improvements at public auctions to the highest bidders, to be removed by the respective purchasers thereof; the sums bid at such sales to be paid in cash or in warrants of the Board; and if at such auction there shall be no responsible bidder for such improvements, with the obligation to remove them within the time specified in the terms of sale, the Board was to remove the same at the cost of the "Dupont Street Fund." (Section 17.)

The street, when widened, was to be sewered, graded, sidewalked, and paved by the municipal authorities, the expense of such work to be assessed upon the adjacent property, or borne by the city and county, in the same manner as if the street remained of its original width. (Section 18.) The railway tracks in the street were required to be removed and changed to the center of the same by the street railroad companies then using tracks therein. (Section 19.)

The last section of the Act (Section 22) provided that the completion of the work should be deemed an absolute acceptance, by the owners of all lands affected by the Act and by their successors in interest, of the lien created by it upon the several lots so affected, and operate as an absolute waiver of all claim in the future upon the City and County of San Francisco, and their successors in interest, for any part of the debt created by the bonds authorized to be issued. "This shall be regarded as a contract between said owners and the holders of said bonds and said city and county, and this provision shall be stated on the face of the bonds." (Stats. Cal. 1875-76, c. 326, p. 433.)

John Garber, Thos. B. Bishop, and Jos. H. Choate, for plaintiff in error.

John Mullan, A. H. Garland, and H. J. May, for defendant in error.

Mr. Justice HARLAN, after stating the facts in the foregoing language, delivered the opinion of the Court:

The Chief Justice of the Supreme Court of California, under its order, made his certificate to the effect that in this suit and appeal there was drawn in question the validity of the above Act of March 23, 1876, and the authority exercised and the proceedings taken under it, on the ground that the statute and said authority and proceedings were repugnant to the fourteenth amendment to the Constitution of the United States, and that the decision of that Court was in favor of their validity.

The provisions of the statute to which we have referred, sufficiently indicate its scope and effect, and enable us (without referring to others that relate to matters of mere detail) to determine whether or not the Act, upon its face or by its necessary operation, is repugnant to that clause of the Constitution declaring that no State shall deprive any person of property without due process of law.

We have seen that the statute defined the district benefited by the widening of Dupont Street, and upon which the assessment to meet the cost of the work was to be imposed; made it a condition precedent to the proposed improvement that it should be declared by resolution or order of the Board of Supervisors of the city and county to be expedient; directed that, after the passage of such a resolution or order, the Dupont Street Commissioners should publish, for not less than ten days, in two daily papers in San Francisco, a notice informing property owners along the line of the street of its organization, and inviting all persons interested in property sought to be taken, or that would be injured by the widening of that street, to present descriptions of their respective lots, and a statement in writing of their interest in them; allowed the majority in value of owners of property within the district embracing the lands of the plaintiffs, at any time within thirty days after the last publication of the above notice, by written protest filed with the Board of Commissioners, to defeat altogether the proposed widening of Dupont Street; required the Board to prepare a written report showing the description and actual cash value of the several lots and subdivisions of land and buildings included in the land proposed to be taken for the widening of the street, the value and damage determined upon for the same, respectively, and the amount in which, according to its judgment, each lot had been or would be benefited by reason of the widening of the street, relatively to the benefits accruing to other lots of land within the designated district; and directed such report, as soon as completed, to be left at the office of the Board daily, during ordinary business hours, for the free inspection of all persons interested, and notice of the same being open for inspection at such time and place published by the Board daily, for twenty days, in two daily newspapers printed and published in the city and county.

But this was not all. For any person interested, and who felt himself aggrieved by the action or determination of the Board, as indicated by its report, was permitted, at any time within the above thirty days, to apply by petition to the County Court of the city and county, showing his interest in the proceedings of the Board of Commissioners and his objections thereto, for an order that would bring before that Court the report of the Board, together with such pertinent documents or data as were in its custody and were used in preparing its report. It was made the duty of the party filing the petition to serve, on the same day, a copy thereof on at least one of the members of the Board of Commissioners, who were at liberty to appear by counsel, or otherwise, and make answer to it. The Court was also empowered to hear the petition, and set it down for hearing within ten days from its being filed. Provision was made for the taking of testimony upon the hearing, and the Court was authorized to use its process to compel the attendance of witnesses, and the production of books, papers, or maps in the custody of the Board or otherwise. The discretion given to the Court, after hearing and considering the application, to allow or to deny the order prayed for, was, of course, to be exercised judicially, according to the showing made by the petitioners. And that complete justice might be done, the Court was invested with power, not simply to approve and confirm the report of the Board, but to refer it back, with directions to alter or modify the same in the particulars specified by the Court. Until such alterations and modifications were made, the Court was under no duty to approve or confirm the report; and until it was approved and confirmed, the Board was without authority to proceed at all in the work committed to it by the statute.

Were not these provisions in substantial conformity with the requirements of "due process of law," as recognized in the decisions of this Court? In *Davidson vs. New Orleans*, 98 U. S. 97, 104, it was said that "whenever, by the laws of a State, or by State authority, a tax, assessment, servitude, or other burden is imposed upon property for the public use, whether it be for the whole State or for some more limited portion of the community, and those laws provide for a mode of confirming or contesting the charge thus imposed, in the ordinary Courts of justice, with such notice to the person, or such proceeding in regard to the property as is appropriate to the nature of the case, the judgment in such proceedings cannot be said to deprive the owner of his property without due process of law, however obnoxious it may be to other objections." So, in *Hagar vs. Reclamation Dist.*, 111 U. S. 701, 708 (4 Sup. Ct. Rep. 663): "Undoubtedly, where life and liberty are involved, due process requires that there be a regular course of judicial proceedings, which imply that the party to be affected shall have notice and an opportunity to be heard; so, also, where title or possession of property is involved. But where the taking of property is in the enforcement of a tax, the proceeding is necessarily less formal, and whether notice to him is at all necessary, may depend upon the character of the tax and the manner in which its amount is determinable. * * * As stated by Mr. Justice Bradley, in his concurring opinion in *Davidson vs. New Orleans*: 'In judging what is due process of law, respect must be had to the cause and object of the taking, whether the taxing power, the power of eminent domain, or the power of assessment for local

improvements, or some of these; and if found to be suitable or admissible in the special case, it will be adjudged to be due process of law; but if found to be arbitrary, oppressive, and unjust, it may be declared to be not due process of law." Of the different kinds of taxes which a State may impose, and of which, from their nature, no notice can be given, the Court, in that case, enumerates poll taxes, licenses (not dependent upon the extent of business), and specific taxes on things, persons, or occupations. (Page 709, 111 U. S., and page 687, 4 Sup. Ct. Rep.)

These principles were reaffirmed in *Kentucky Railroad Tax Cases*, 115 U. S. 321, 331 (8 Sup. Ct. Rep. 57); and in *Spencer vs. Merchant*, 125 U. S. 345, 355 (8 Sup. Ct. Rep. 921); in the latter of which cases it was said that "the Legislature, in the exercise of its power of taxation, has the right to direct the whole or part of the expense of a public improvement, such as the laying, grading, or repairing (and, equally, the widening) of a street, to be assessed upon the owners of lands benefited thereby;" and that "the determination of the territorial district which should be taxed for a local improvement is within the province of legislative discretion;" also that, "if the Legislature provides no notice to and hearing of each proprietor, at some stage of the proceedings, upon the question what proportion of the tax shall be assessed upon his land, there is no taking of his property without due process of law."

Tested by these principles, the statute providing for the widening of Dupont Street cannot be held to be repugnant to the constitutional requirement of due process of law.

The notice by publication to all who owned property liable to be assessed for the cost of that improvement was appropriate to the nature of the case, and was reasonable in respect to the length of time prescribed for the publication, and ample opportunity was given to all persons interested to test in a Court of competent jurisdiction the fairness and legality of any assessment proposed to be made upon their property for the purposes indicated by the statute. That Court had power to require such alterations or modifications of the report of the Board of Commissioners as justice demanded. It was not bound to approve any report that did not conform to its judgment as to what was right; and without such confirmation the Board could not proceed in the execution of the work contemplated by the Legislature.

If we had any doubt of the correctness of these views, we should accept the interpretation which the highest Court of the State places upon the statute. When the inquiry is whether a State enactment under which property is proposed to be taken for a public purpose accords full opportunity to the owner, at some stage of the proceedings involving his property, to be heard as to their regularity or validity, we must assume that the inferior Courts and tribunals of the State will give effect to such enactment as interpreted by the highest Court of that State.

The Supreme Court of California, speaking by Mr. Justice Temple in this case, has said: "We are not considering here a statute which is silent as to the hearing. The provisions in question were undoubtedly inserted in view of the constitutional requirement, and for the purpose of affording that opportunity to be heard, without which the law would be void. To give the statute the construction contended for would not only defeat the evident purpose, but would make the whole proceeding farcical. And, I must confess, it seems to me it requires great industry in going wrong, in view of all the circumstances, to conclude that such can be the meaning. Inapt words certainly are found in the section (Section 8), but it would not have provided so elaborately for a thorough investigation for grievances if it were not intended that redress should be awarded. The statute has, apparently, been patched and tinkered after it was first drawn, and incongruous matter injected into the body of it. But it still provides for a full hearing, and that the Court may alter and modify. And it seems that such action is to be based upon the hearing provided for. The word 'discretion' is used in various meanings, but here, evidently, it was intended to submit the whole matter to the sound judgment of the Court, to be exercised according to the rules of law." (72 Cal. 404, 421; 14 Pac. Rep. 71.)

It is said that the County Court was without power to adjudge the statute to be unconstitutional, and had no discretion, except to confirm the report, or to require it to be altered or modified. We do not perceive that this is a material inquiry, so long as the statute is not repugnant to the Constitution. But we do not admit that the County Court was without power to hold it to be unconstitutional and void—if such was its view—and to decline, upon that ground alone, to confirm any report that the Board of Commissioners might have filed. The Judge or Judges of that Court were obliged, by their oath of office, and in fidelity to the supreme law of the land, to refuse to give effect to any statute that was repugnant to that law, anything in the statute or the Constitution of the State to the contrary notwithstanding. Upon this subject, as well as in respect to the power of the County Court to consider objections of every nature that might be made to the confirmation of any report from the Board of County Commissioners, the Supreme Court of the State said:

"The statute does not expressly authorize the Court to pass upon the validity of the Act, or whether the Board of Supervisors had passed the necessary resolution, or the notices had been given. But the power to do this is necessarily involved in the power of the Court to act at all. It may be that the Court could not pass upon these questions, upon which its jurisdiction depended, so as to conclude all inquiry even on a collateral attack. It was a constitutional Court, invested with jurisdiction, by the Constitution, of special cases. The parties had full notice of the proceeding, and of their right to be heard." Again: "The statute places no limit upon the objections which might be made by those deeming themselves aggrieved by the action or determination of the Board, as shown in the report. As all their determinations which could affect any person were

required to appear in the report, this would seem to include all possible objections. The determination, for instance, might have been objected to because, the Act being invalid, or the notices not having been given, the Board had no right to proceed to act at all. If this contention were sustained, the result would have been that the Court would not have confirmed the report, and the proceedings would have ended without fixing a charge upon the property of plaintiffs. They could have complained that a wrong basis was adopted in estimating damages or benefits; that the estimated cost was too much; or for any misconduct of the Commissioners which could affect them; or that the cost exceeded the estimated benefits; and it does not seem to me that the Court would have found any difficulty in granting relief." (72 Cal. 404, 422; 14 Pac. Rep. 71.)

It is contended, however, that the Act was so administered as to result in depriving the plaintiffs of their property without due process of law. This contention is material only so far as it involves the inquiry as to whether the tribunals charged by the statute with the execution of its provisions acquired jurisdiction to proceed in respect to the lots or lands in question and the owners thereof. Jurisdiction was, of course, essential before the plaintiffs' property could have been burdened with this assessment. But errors in the mere administration of the statute, not involving jurisdiction of the subject and of the parties, could not justify this Court, in its reëxamination of the judgment of the State Court upon writ of error, to hold that the State had deprived, or was about to deprive, the plaintiffs of their property without due process of law. Whether it was expedient to widen Dupont Street, or whether the Board of Supervisors should have so declared, or whether the Board of Commissioners properly apportioned the cost of the work or correctly estimated the benefits accruing to the different owners of property affected by the widening of the street, or whether the Board's incidental expenses in executing the statute were too great, or whether a larger amount of bonds were issued than should have been, the excess, if any, not being so great as to indicate upon the face of the transaction a palpable and gross departure from the requirements of the statute, or whether upon the facts disclosed the report of the Commissioners should have been confirmed, are, none of them, issues presenting Federal questions, and the judgment of the State Court upon them cannot be reviewed here.

Upon the issue as to whether the Board of Commissioners and the County Court acquired jurisdiction to proceed in the execution of the statute, the evidence is full and satisfactory. The Board of Supervisors of the city and county, by resolution within sixty days after the passage of the Act, declared it to be expedient and necessary that Dupont Street should be widened in accordance with the statute. (Section 2.)

In conformity with this declaration, the Mayor, Auditor, and County Surveyor of the city organized as a Board of Dupont Street Commissioners, and by notice, published for not less than ten days in two daily papers printed in San Francisco, informed property owners along the line of that street of such organization, and invited all persons interested in property sought to be taken, or which would be injured by the widening of Dupont Street, to present to it maps and plans of their respective lots, and a written statement of the nature of their claim or interest in such lots. (Section 6.) The Board of Commissioners caused to be prepared and adopted maps, plans, and diagrams, and made the written report required by Section 7 of the Act, and such report was left at the office daily, during ordinary business hours, for thirty days, for the free inspection of all interested, notice that such report was so open for inspection for such time and at such place being published by the Board daily, as required by that section, in two daily newspapers printed and published in the City and County of San Francisco. Various parties who were interested in and affected by the widening of the street brought before the County Court of the city and county, by petition filed in due time, the written report of the Commissioners, and all documents in their possession.

The hearing of these petitions resulted in certain alterations and modifications of the report, and, on the twentieth of December, 1876, the County Court made its final order of confirmation. That order, after reciting in detail the performance of all the acts required by the statute in execution of its provisions, proceeded: "And it further appearing to the Court that all the proceedings taken by said Board have been duly and legally taken, and that each and all of the acts, matters, and things provided by said Act to be done and performed by said Board in the premises have, on the part of said Board, been duly and regularly done and performed, in the form, at the times, and in the manner prescribed by said Act, and said Board having this day brought the said report, as so modified, into this Court, and duly filed a petition in this Court praying that said report, as so modified by this Court, be confirmed and approved; now, therefore, after hearing all the proofs in the said matter, and on motion of William Pierson, Esq., attorney for said Board of Dupont Street Commissioners, and no one objecting thereto, and after full consideration thereof, it is ordered, adjudged, and decreed that the said report of the said Board of Dupont Street Commissioners, in the matter of the widening of Dupont Street, filed in this Court on the twenty-seventh day of October, A. D. 1876, as modified by said Board under the orders of this Court heretofore made herein, and as the same now exists on file herein, be and the same is hereby fully and in all respects approved and confirmed. And it is further ordered, adjudged, and decreed that the lands described in the volume of said report, entitled 'Report Damages Widening Dupont Street,' be and the same are hereby taken and dedicated for an open and public street, and for the widening of said Dupont Street, between Bush and Market Streets, and that the title thereto, and every part thereof, as particularly described in said volume of said report, is vested in the City and County of San Francisco, for the purpose of said street forever, upon the payment, in the manner prescribed by said Act, to the owners of each piece or parcel of

such land, and to the owners of the improvements thereon, or upon the deposit or tender, as prescribed by said Act, of the amounts fixed and determined in and by said volume of said report." Subsequently to this order the street was widened in accordance with the report, and, as widened, is in public use, the special benefits of the improvement, whether more or less, being enjoyed by the plaintiffs, and by others in like situation.

It is contended that the notices, required by the different sections of the Act to be published for a designated number of days, were not so published. This contention rests, principally, upon the ground that the notices, on some of the days, appeared in a "supplement," of some of the newspapers, and not in the body of the paper, where reading matter was usually found. There is no force in this objection, and it does not deserve serious consideration.

Other objections have been urged by the plaintiffs which we do not deem it necessary to consider. For instance, it is said that the Mayor of the city of San Francisco, one of the Board of Commissioners, was himself the owner of a lot on Dupont Street, and for that reason was incompetent to act as one of the Board of Street Commissioners; that some of the alterations and modifications of the report of the Commissioners, made upon the hearing in the County Court of the petitions filed by different parties, were so made under private arrangements between the Commissioners and those parties, of which other property owners along Dupont Street had no notice, and by which such owners were injuriously affected; that the Board of Commissioners selected experts to "assist" it in estimating the damages for property taken and injured by the proposed improvement, and the benefits accruing therefrom; and that the report of those experts was accepted by the Commissioners, without themselves making or attempting to make an appraisal of damages or an assessment of benefits under the statute; and that such appraisal and assessment were not, in fact, correct, fair, or just, but were fraudulent. In respect to all these, and like objections, it is sufficient to say that they do not necessarily involve any question of a Federal nature, and, so far as this Court is concerned, are concluded by the decision of the Supreme Court of California.

We are of opinion, upon the whole case, that the Supreme Court of California correctly held that the plaintiffs had not been, or were not about to be, deprived of their property, in violation of the Constitution of the United States.

Decree affirmed.

FIELD, J.: I dissent.

20. REPORTS OF THE AUDITOR.

BERKELEY, September 3, 1890.

A. S. HALLIDIE, *Esq.*, *Chairman Finance Committee of the Board of Regents of the University of California:*

SIR: I have examined and audited the books and accounts of the Regents of the University of California for July, 1890, and find them correct.

Vouchers, properly approved, audited, and receipted, are on file in the Secretary's office for all payments.

Herewith please find trial balance of the general ledger up to and including July 31, 1890.

Respectfully submitted.

JOHN J. HERR,
Auditor.

BERKELEY, October 18, 1890.

A. S. HALLIDIE, *Esq.*, *Chairman Finance Committee:*

SIR: I have examined and audited the books and accounts of the Board of Regents of the University of California for August and September, 1890, and find them correct.

Vouchers, properly examined, approved, audited, and receipted, are on file in the Secretary's office for all payments.

Herewith please find trial balances of the Agricultural Experiment Stations and general ledgers up to and including September 30, 1890.

Respectfully submitted.

JOHN J. HERR,
Auditor.

BERKELEY, February 21, 1891.

A. S. HALLIDIE, *Esq.*, *Chairman Finance Committee Board of Regents of the University of California:*

SIR: I have examined and audited the books and accounts of the Board of Regents of the University of California for October, November, and December, 1890, and January, 1891, and find them to have been kept correctly. Vouchers, properly examined, approved, and audited by the proper committee, with requisitions attached, and receipted, are on file in the Secretary's office for all payments made in above time.

The amount of cash in the several savings banks, and in the hands of the Treasurer, is as given in the general ledger, and I have verified same at the banks and with the Treasurer.

Herewith please find trial balances of the general ledger and land ledger to February 1, 1891, and of the Agricultural Experiment Stations' ledger to January 1, 1891.

Respectfully submitted.

JOHN J. HERR,
Auditor.

On file March 10, 1891.

BERKELEY, March 21, 1891.

A. S. HALLIDIE, *Esq.*, *Chairman Finance Committee of the Board of Regents of the University of California:*

SIR: I have examined and audited the books and accounts of the Regents of the University of California for February, 1891, and find them correct.

Vouchers, properly examined, approved by the proper committees, audited and ordered paid by the Board of Regents, are on file in the Secretary's office for all payments.

Herewith please find trial balance of general ledger for February, 1891.

Respectfully submitted.

JOHN J. HERR,
Auditor.

BERKELEY, CAL., June 17, 1891.

A. S. HALLIDIE, *Esq.*, *Chairman Finance and Auditing Committee of the Board of Regents of the University of California:*

SIR: I have examined and audited the books and accounts of the Regents of the University of California for March, April, and May, 1891, and find them correct. Vouchers, properly examined, audited by committee, ordered paid by the Board of Regents, and receipted, are on file in the Secretary's office for all payments in above period.

Herewith find trial balance of general ledger to May 31, 1891.

Respectfully submitted.

JOHN J. HERR,
Auditor.

SAN FRANCISCO, CAL., July 31, 1891.

A. S. HALLIDIE, *Esq.*, *Chairman Finance and Auditing Committee of the Board of Regents of the University of California:*

SIR: I have examined and audited the books and accounts of the Regents of the University of California for June, 1891, and find them correct.

Vouchers, properly examined, approved, and audited by proper committees, ordered paid by the Board of Regents, and receipted, are on file in the Secretary's office for all payments.

The condition of the investment of funds is as follows to June 30, 1891:

In State, county, and city bonds.....	\$991,000 00
In mortgages.....	886,000 00
	<u>\$1,877,000 00</u>

Belonging to the following funds:

Consolidated Perpetual Endowment Fund—Bonds.....	\$903,000 00	
Mortgages.....	757,694 73	
		\$1,640,694 73
Lick Observatory Fund—Bonds.....	\$88,000 00	
Mortgages.....	2,000 00	
		90,000 00
Reese Library Fund—Mortgages.....		40,000 00
D. O. Mills Endowment Fund—Mortgages.....		87,073 66
Medal Fund—Mortgages.....		3,248 54
Tompkins Endowment Fund—Mortgages.....		13,875 85
Pioche Donation Fund—Mortgages.....		2,107 22
		<u>\$1,877,000 00</u>

Interest received during year ending June 30, 1891:

From bonds.....	\$61,547 51
From State Diverted Fund.....	9,570 00
From mortgages.....	52,743 92
	<u>\$123,861 43</u>

Belonging to the following funds:

Consolidated Perpetual Endowment Fund—From bonds and State Diverted Fund.....	\$66,132 51	
Mortgages.....	43,744 24	
		\$109,876 75
Lick Observatory Fund—Bonds.....	\$4,985 00	
Mortgages.....	110 00	
		5,095 00
D. O. Mills Endowment Fund—Mortgages.....		5,445 49
Tompkins Endowment Fund—Mortgages.....		491 81
Reese Library Fund—Mortgages.....		2,608 74
Medal Fund—Mortgages.....		203 40
Pioche Donation Fund—Mortgages.....		140 24
		<u>\$123,861 43</u>

Cash on hand in savings banks (which I have verified), as follows:

In San Francisco Savings Union.....	\$22,417 39
In Union Savings Bank, Oakland.....	17,772 89
In Security Savings Bank, San Francisco.....	13,971 92
In Oakland Bank of Savings.....	7,897 35
In German Savings and Loan Society, San Francisco.....	1,402 52
In Humboldt Savings and Loan Society, San Francisco.....	157 94
	<u>\$63,620 01</u>

Belonging, nominally, to the following funds and accounts:

Brayton Property Fund.....	\$9,987 10
State University Fund, one cent tax.....	7,550 22
Excess payments and 20 per cent deposits.....	36,418 32
Pioche Donation Fund.....	2,046 46
Tompkins Endowment Fund, Agassiz Professorship.....	198 08
Diploma Fund, students' deposits.....	883 15
University Medal Fund.....	26 22
German Library Fund.....	1,560 46
	<u>\$63,620 01</u>

Of this sum of \$63,620 01, there has been advanced from the General Fund by the Treasurer:

For bills paid on account of German Library.....	\$1,045 35
For loan to J. & J. E. Johnson.....	12,336 42
For loan to D. N. Hastings.....	8,943 76
	<u>\$22,325 53</u>

Several of these deposits, as designated by the savings banks passbooks, do not correctly state to what fund or account the money belongs; some are obsolete.

I respectfully recommend that the Finance and Auditing Committee be authorized to withdraw from the savings banks all sums due the General Fund, and such further sums as may be necessary, and pay same to the Treasurer; to revise and rename the accounts in new bank passbooks, as may be needed, so that the deposits therein shall correctly show where they belong.

As an instance of the needed change, I cite "Excess payments and 20 per cent deposits" passbooks, which show on hand \$36,418 32, when there is due the United States, on account of excess, but \$4,028 92.

It has been the custom heretofore for the Secretary to deposit in his name (as Secretary) in the Nevada Bank all sums received from students as deposits for use of chemicals, materials, library dues, etc., and to repay them, at end of term or on withdrawal, balances due by his check on said bank.

There is at this date deposited in the name of J. H. C. Bonté, Secretary, in the Nevada Bank, the sum of \$1,045, as follows:

For students' library deposits, subject to withdrawal.....	\$795 00
For Reese Library Contingent Fund.....	250 00
Total.....	<u>\$1,045 00</u>

The Reese Library Contingent Fund of \$250 is contained in the ledger account of J. H. C. Bonté, Secretary, "Contingent Fund" of \$486 37, the balance being cash in his keeping at Berkeley. The Reese Library Contingent Fund does not appear as such in the general ledger, neither does there appear to have been any use made at any time of this fund, and having been so advised by the Secretary, I respectfully recommend that the \$250 be returned to the Treasurer into the General Fund, from which it was taken; that the sum of \$795, library dues deposits, be deposited with the Treasurer; that on and after July 1, 1891, all moneys received from students as deposits for supplies, chemicals, library dues, etc., be deposited with the Treasurer as received, and that proper accounts be opened in the general books to show receipts and payments.

And for the purpose of expediting business and to save delays, the

making of frequent calls and trips to Berkeley by the students for settlement, that the President and Secretary of the University (and in the absence of the Secretary, the Assistant Secretary) be authorized to check direct on the Treasurer in settlement of balances due students, on the special and specific accounts mentioned, and that a checkbook for this purpose be provided.

The condition of the cash account June 30, 1891, is as follows:

Cash Book "H," page 111, Cash Dr.	\$211,348 43
Cash Book "H," page 112, Cash Cr.	25,382 73
In hands of L. Sloss, Esq., Treasurer.....	<u>\$186,015 70</u>

Belonging to the following funds and accounts:

Revenue account, being overplus on receipts and expenses, January 1, 1889, to June 30, 1891.....	\$79,795 80
D. O. Mills Endowment Fund.....	6,294 03
Pioche Donation Fund.....	185 48
Tompkins Endowment Fund.....	3,067 83
Diploma Fund.....	20 00
State appropriations.....	1,650 28
Reese Library Fund.....	13,112 06
Morrill Aid Fund.....	12,564 80
Agricultural Experiment Stations.....	923 39
Toland Medical College.....	199 01
State fees.....	35 00
Students' deposits.....	10 24
Building Fund account.....	31,728 36
Consolidated Perpetual Endowment Fund.....	38,429 44
	<u>\$186,015 70</u>

Amount due Consolidated Perpetual Endowment Fund is \$40,868 52.

Due General Fund in savings banks.....	\$22,325 53
Less due Consolidated Perpetual Endowment Fund.....	4,439 08
Will leave in General Fund.....	<u>\$17,886 45</u>

Herewith please find trial balance to June 30, 1891, of the general, Agricultural Experiment Stations, and Morrill Aid Fund ledgers.

Respectfully submitted.

JOHN J. HERR,
Auditor.

SAN FRANCISCO, CAL., August 6, 1891.

A. S. HALLIDIE, Esq., Chairman Finance and Auditing Committee of the Board of Regents of the University of California:

SIR: In my monthly and annual report of June 30, 1891, to the Finance and Auditing Committee, it was recommended that certain sums due the general and other funds, in the savings banks, be drawn and paid to the Treasurer; that the several savings banks passbooks be revised and renamed; that accounts, as necessary, be opened in the general books of account to agree with such changes. These recommendations were approved by the Finance and Auditing Committee, acting under order of the Board of Regents, as follows (Minutes, Vol. VII., page 232, dated May 14, 1890):

Resolved, That the Finance Committee of the Board of Regents be and is hereby authorized and empowered to withdraw from savings banks any or all moneys therein deposited to the credit of the Regents of the University of California, whenever the said Finance Committee shall deem it advisable, and, under the instruction of the Board, to invest the same.

Such changes have been made, and I have to report the following condition of the cash in savings banks:

In Oakland Savings Bank	\$7,513 45
In Union Savings Bank of Oakland	7,074 57
In Security Savings Bank of San Francisco	6,075 38
In San Francisco Savings and Loan Society	9,496 99
In German Savings and Loan Society	515 11
	<u>\$30,675 50</u>

Belonging to the following funds and accounts:

Consolidated Perpetual Endowment Fund	\$10,608 25
Excess payments due United States	4,028 92
Excess payments on minimum lands	9,496 99
Students' deposits for diplomas	5,853 15
Tompkins Endowment Fund	198 08
German Library Fund	515 11
	<u>\$30,675 50</u>

The condition of the cash account, after transfers from savings banks to the Treasurer, is as follows:

Cash Book "H," pages 111 and 121, Cash Dr.	\$244,292 94
Cash Book "H," page 112, Cash Cr.	25,332 73
	<u>\$218,960 21</u>
In hands of Louis Sloss, Treasurer	<u>\$218,960 21</u>

Belonging to the following funds and accounts:

Consolidated Perpetual Endowment Fund	\$97,765 82
D. O. Mills Endowment Fund	6,294 03
Tompkins Endowment Fund	3,067 83
Diploma Endowment Fund	20 00
Reese Library Fund	13,112 06
Morrill Aid Fund	12,564 80
Building Fund, one cent tax	31,728 36
Medal Fund	26 22
Pioche Donation Fund	185 48
State appropriations	1,650 26
Agricultural Experiment Stations	923 39
Toland Medical College	199 01
State fees	35 00
Students' deposits for diplomas	10 24
Revenue account (balance)	37,346 02
General Fund	14,081 69
Total	<u>\$218,960 21</u>

The general ledger accounts have been written to show the correct amounts in the Consolidated Perpetual Endowment Fund; excess payments due the United States; excess payments on minimum lands; German Library Fund; students' deposits for diplomas; Tompkins Endowment Fund; State of California; revenue account; and in the several savings banks, up to end of University year, June 30, 1891.

Proper accounts will be opened in the general ledger from July 1, 1891, showing deposits of students for supplies, chemicals, library dues, etc.

Trial balance of general ledger herewith.

Respectfully submitted.

JOHN J. HERR,
Auditor.

Statement of Consolidated Perpetual Endowment Fund.

1. <i>State Endowment</i> -----	\$750,000 00
Should have been \$811,500; State subsequently made up balance. (See 2d.)	
2. <i>Diverted Fund</i> (so called)-----	61,500 00
This is balance due on above.	
Accumulated interest allowed of-----	18,250 00
The State owes to the University \$79,750, on which it pays annually 6 per cent, \$4,785, until it elects to return the principal.	
3. <i>Seminary Lands</i> —(72 sections, or 46,080 acres).	
Sold by the State, 45,956.75 acres, realizing-----	60,947 99
Commissioner of United States Land Office, Washington, D. C., says this grant is practically closed, but 103.77 acres being due.	
4. <i>Forfeited Seminary Lands</i> —	
Sold by the University Land Office, 1,496.07 acres, realizing-----	6,280 35
5. <i>Public Building Fund</i> —(10 sections, or 6,400 acres).	
Sold by the State, 5,921.58 acres, realizing-----	7,733 98
Commissioner of United States General Land Office, Washington, D. C., says there are due the State on this grant 1,300.92 acres.	
6. <i>Brayton Property Fund</i> —	
Sale of Blocks 172, 173, 192, and 193, and buildings, for-----	\$169,760 00
Less mortgage-----	50,000 00
	<u>\$119,760 00</u>
Less returned to General Fund-----	32,255 00
	87,505 00
7. <i>United States Congressional Grant of 150,000 acres</i> —	
Realized on sales to July 1, 1891-----	699,333 08
8. <i>Interest received from savings banks</i> —	
On excess and 20 per cent deposits to July 1, 1891-----	7,513 45
9. <i>Revenue account</i> —	
Transferred to Consolidated Perpetual Endowment Fund-----	50,000 00
	<u>\$1,749,063 80</u>

Invested as follows:

In bonds-----	\$903,000 00
In mortgages-----	737,694 73
In savings banks-----	10,603 25
	<u>\$1,651,297 98</u>
In hands of Treasurer-----	97,765 82
	<u>\$1,749,063 80</u>

JOHN J. HERR,
Auditor.

JUNE 30, 1891.

21. PROPOSED IMPROVEMENTS.

The following matters have been fully considered and partially approved from time to time by the proper authorities:

1. Much of the ground around the buildings is worthless as soil, because the soil was scraped off many years ago. The ground should be sub-soiled and heavily manured.

2. Provision should be made to rent annually the Bailey tract as a pasture.

3. The Palmer tract should be put to some use.

4. *Boundaries*.—The surveyor's monument on Audubon Street was removed a year and a half ago by M. G. King, town engineer. He agreed to replace it. It has not been replaced.

5. The surface of the ground between the road running from the Library to Audubon-Street bridge and the creek should be smoothed. To do this some filling will be necessary.

6. *The Shooting Range*.—Several trees should be cut off, should the targets remain where they are. The targets, however, should be removed to a point east of the forest.

7. *Roads*.—The roadway east of the Chemical Laboratory, and running northward, should be closed, as the ground is needed as a yard for the Chemical Laboratory.

A new road should be taken out of the creek road at the west end of the Chemical Laboratory, and run northwest in front of the College of Mines, and into the road running on the north side of the College of Mines. The latter road should continue straight up the hill to the old road, and the old road should be finished to the west end of the grounds.

The creek road, ending at Audubon-Street bridge, should be guttered.

A roadway should extend along the south side of the University site from Choate Street to Audubon Street.

The road through the oak grove, and running to the west end, should be guttered and macadamized.

8. Hitching posts should be placed in convenient places.

9. The culvert across Oxford Street is in a dangerous condition; the water deposited by the heaviest rains cannot be carried off through the culvert safely.

10. *Paths*.—There should be one along the south side of the creek road, from its junction with the road to the horse sheds, to Audubon-Street bridge, and be well macadamized.

One from the Library to College of Mechanic Arts.

One from the foregoing to the new Chemical Laboratory.

One broad path from the Gymnasium to the greenhouses skirting the Campus on the east.

One broad pathway from the great central path to the west end of the grounds.

A sidewalk along the north side of Allston Way from Dana Street to Oxford Street, and on west side of Oxford Street to Strawberry Creek.

The pathway through Magnolia Grove should be improved immediately.

11. *Bridges*.—Two new bridges should be built at once; should be wooden or iron bridges, on brick or on stone foundations.

Audubon-Street bridge should be raised two and one half feet.

12. *Dams*.—Four new dams are needed. An apron is needed to the lower dam; delay in this matter will prove disastrous. We have no stone fit for such work. An apron is needed for the floor of the brick culvert; this is of immediate importance. Plans for all these have been prepared and lost.

13. *Shrubbery*.—A row of tall shrubbery should be planted immediately on the east side of the cinder track, for the purpose of concealing the track. Little shrubbery can be planted now, as we have no water to preserve it.

The grove of palm trees is in danger of immediate destruction by the students, who use the leaves to decorate with.

14. *Buildings*.—The interior of buildings should not be calsomined; they should be painted.

Additional urinals are needed in the Chemical Laboratory.

The Chemical Laboratory needs a very large yard, safely fenced.

Walks around the building should be made, etc.

The concrete wall in front of the Library should be replaced with a better wall.

The basements of buildings should be protected by iron bars, especially the Armory and new Chemical Laboratory.

The Gymnasium needs a new tank. All the tanks should be overhauled.

The cottage sewer should be made to connect with the Allston Way sewer; it now connects with the Oxford-Street culvert.

The trees around the lower cottages should be thinned out or cut down altogether.

15. *Water*.—We have no means of protecting the buildings against fire. The water in the old reservoir could be used for that purpose, with larger pipes. A new system of pipes connecting with the reservoir is an absolute necessity. We have needed this improvement for many years. This improvement, however, will not be sufficient. A larger reservoir, still higher, and on our own territory, is needed to enable us to contend successfully with fire. A large reservoir is needed, to enable us to irrigate the grounds. The tunnel, once cleaned out, would give the new Chemical Laboratory all the water it would need. It is an easy matter to double our water supply.

These are some of the matters that have been thoroughly considered and partially approved of. None of them have been condemned. Many other matters have been considered, and of these it will be easier to speak than write.

I have discussed the foregoing and other matters related thereto with many distinguished men, who have made the subjects discussed special studies of a lifetime.

22. RELATIONS BETWEEN THE TRUSTEES OF THE TOWN OF BERKELEY AND THE UNIVERSITY.

I deem it my duty to call the attention of the Board of Regents to the continued efforts on the part of the Trustees of the town of Berkeley to obtain control of the University site.

First—Several years since, the Board of Regents, at great expense, caused a survey of the University site to be made. The survey was then formally adopted by the Board, and permanent granite monuments were then ordered to be placed at the several corners and turns of the said survey, and were so placed by M. G. King, the surveyor. These monuments were deemed of great importance, because prior to that time there had existed no indication whatever of the boundaries of the University site. About one year and a half since, the town of Berkeley, under the direction of M. G. King, town engineer, graded Audubon Street at a point where one of said granite monuments was placed, and the said M. G. King, against the protest of the Superintendent of Grounds, removed said granite monument. The Superintendent of Grounds requested M. G. King, engineer of the town of Berkeley, to replace the said monument immediately, and he agreed to do so. Mr. King has been frequently reminded of said promise, and to this day he neglects and refuses to replace said monument.

Second—About nine years ago the Town Trustees forcibly seized Oxford Street, near the junction of Center and Oxford Streets, and changed the course of Strawberry Creek, and built a culvert, the east

end of which was upon University ground, inside of the University fence, against the protest of the Superintendent of Grounds.

More recently the Town Trustees allowed the University sewer pipe over Strawberry Creek culvert to be broken, and consented thereto by its own official neglect and approval, and has ever since refused to repair the said break, although the University agreed to bear half the expense of said repairs. As a natural result the sewage from the University cottages is now emptied into Strawberry Creek, to the detriment of the public health. Again, notwithstanding the fault of the Trustees in this matter, the Town Trustees publish the Board of Regents as being at fault in this matter.

Again, the Town Trustees have given a franchise to a street railway over Oxford Street, from Center Street to Allston Way, and from Oxford Street, on Allston Way, to Dana Street, knowing that a track laid on said streets must pass over University ground, the Trustees of Berkeley meaning thus to do indirectly what they hesitate to do directly.

Again, the said railway company, acting under the authority of the Town Trustees, has placed part of its running apparatus off of Oxford Street and on a portion of the University site. In this connection you will allow me to say that the University holds ten acres of land in the southwest corner of our fence line, the place where this invasion has occurred, upon condition that no portion of said ten acres shall be encumbered.

It is not my duty to settle the law in this case, but it is my duty to impress upon the minds of those in authority the plain, undeniable facts as they exist.

Third—Some years ago the Board of Regents laid a sewer pipe from the University buildings to the junction of Dana Street and Allston Way; then down Allston Way to Oxford Street; then down Oxford to Center Street, where the said sewer pipe connected with a main leading to the bay. The Trustees of the town of Berkeley have violated the rights of the University in the following manner:

1. They have, without consent of the Board of Regents, cut the University sewer pipe at the junction of Allston Way and Oxford Street.

2. They have, without the consent of the Board of Regents, attached the town sewer, on lower Allston Way, to the University sewer pipe.

3. They have, without the consent of the Board of Regents, connected the Dana Street town sewer with the University sewer pipe, and have made said connection on University ground.

4. The said Trustees of the town of Berkeley, as I am informed by the contractor, now claim the sewer pipe laid down by the Board of Regents.

In this connection, I must say that the Superintendent of Grounds has held himself in readiness to consult with the Town Trustees at all times; that said Superintendent and the Committee on Grounds and Buildings have been willing at all times to consider the wishes of the people of Berkeley, and that the Town Trustees have made these encroachments upon the territory of the University without notifying any person in authority.

Fourth—Again, there is a narrow strip of land lying on the south bank of Strawberry Creek, between the junction of Dana Street and Allston Way on the west, and Choate Street on the east, which the Regents of the University have kept from public use with great care,

frequently closing the same by gate and fences. A few years ago the Regents, through the Committee on Grounds and Buildings, opened a lane through the narrow strip of land for the use of University teams, proclaiming this purpose at the time of opening said lane. The Trustees of the town of Berkeley now claim this lane as town property:

(1) The Town Engineer claims the lane as a street, and to prove the right of the town tears down the fence of a private citizen whose grounds border on the lane.

(2) The Town Engineer authorized contractors to dump dirt and rock in the lane as if it were public property.

(3) The Town Trustees are now entertaining an application for a street railway franchise through said lane.

I might carry this statement much further, furnishing in every line abundant proof of the determination of the Town Trustees to procure and use the University site without consulting the Board of Regents.

OTHER REPORTS, ETC.

The Land Agent's report will be found attached to the report of the Secretary.

The following matter will be found in the General Appendix:

1. Inventory of University property in the Department of Military Science and Tactics, June 1, 1891.
2. Donations to the University Library at Berkeley, 1890-91.
3. Presents to the Library of the Lick Observatory, 1890-91.
4. Presents to the University Museum, 1890-91.

The following statements will be found in the Financial Appendix:

Statement of receipts and disbursements.
 Trial balance for the month of June, 1891.
 Statement of bonds and mortgages.
 Account with the University Fund one-cent tax.
 Condition of University Medal Fund.
 Condition of Edward Tompkins Endowment Fund.
 Salaries, \$142,118 28.
 Fuel, \$820 35.
 Equipment and repairs, \$6,730 29.
 Advertising and printing, \$276 20.
 Telegraphing and expressage, \$447 48.
 Stationery, \$147 78.
 Postage, \$564 25.
 Land administration, \$29 16.
 Incidental expenses, \$955 75.
 College celebrations, \$401 55.
 Official and lecturing expenses, \$1,113 30.
 Cottage repairs, \$253.
 Insurance, \$784 35.
 Water supply, \$2,245 50.
 Agricultural Experiment Stations, \$10,220 04.
 College of Agriculture, \$8,564 58.
 College of Chemistry, \$5,051 28.
 College of Civil Engineering, \$271 79.
 College of Mechanics, \$285 45.
 College of Mechanics (State appropriation), \$345 90.
 College of Mines, \$289 04.
 College of Mines (State appropriation), \$501 87.
 Department of Lick Observatory, \$6,922 79.
 Department of Military Science, \$553 64.
 Department of Mineralogy, \$258 61.
 Department of Physics, \$1,667 12.
 Department of Physical Culture, \$1,435 04.
 Library, \$2,102 63.

Reese Library, \$3,846 44.

Museum, \$686 98.

University site improvements, \$13,014 40.

University Printing Office, \$343 65.

Department of Botany, \$427 35.

Department of Biology, \$267 80.

Department of Botany (State appropriation), \$253 22.

Morrill College Aid Fund, \$1,603 34.

State appropriation (One-cent Fund), \$102,434 52.

Respectfully submitted.

J. H. C. BONTÉ,
Secretary.

REPORT
OF THE
LAND AGENT.

REPORT OF THE LAND AGENT.

To the honorable the Board of Regents of the University of California:

GENTLEMEN: I have the honor to submit the report of the Land Agent for the year ending June 30, 1891:

RECEIPTS FOR THE FISCAL YEAR ENDING JUNE 30, 1891.

From sales of the grant of 150,000 acres	\$13,974 85
From sales of forfeited seminary land	320 00
From interest on deferred payments due the grant of 150,000 acres	2,135 83
From fees for applications, certificates of purchase, and patents	244 00
From fees due Secretary of State for affixing seal to patents	45 00
Total cash receipts	\$16,719 68
Number acres for which certificates of purchase have been issued during the fiscal year ending June 30, 1891	159.44
Number acres of minimum lands patented during the fiscal year ending June 30, 1891	2,101.79
Number acres of double minimum lands patented during the fiscal year ending June 30, 1891	2,174.68

ACCOUNT WITH THE CONGRESSIONAL LAND GRANT OF 150,000 Acres.

Whole number acres patented to June 30, 1890	126,227.98
Whole number acres patented from June 30, 1890, to June 30, 1891	4,276.47
Total number acres patented to June 30, 1891	130,504.45
Whole number acres bearing interest	8,237.38
Whole number acres, full paid, awaiting patents	4,703.70
Whole number acres, full paid, patent fees delinquent	280.00
Approvals, certificates of purchase not issued	360.00
Sold and patented by State Register	204.78
Remaining unsold (abandoned)	5,578.98
Total number acres listed to the grant of 150,000 acres	149,919.29
Selections awaiting action at Washington	299.48
Total amount of principal outstanding of the grant of 150,000 acres	\$30,086 87

Receipts from Sales of the Congressional Land Grant of 150,000 Acres.

Total number acres sold up to June 30, 1891	144,340.31
Cash received from above sales	\$699,333 08
Balance outstanding	30,086 87
Total	\$729,419 95
Showing an average price of \$5 06 per acre.	

SEMINARY AND PUBLIC BUILDING LAND GRANTS.

The records of the Land Office of the University show the following number of acres listed against the Seminary and Public Building Land Grants:

Seminary Lands.

Marysville district.....	25,945.18
Sacramento district (636.09 acres sold, not listed).....	400.00
Visalia district (320 acres sold, not listed).....	640.00
Humboldt district (2,000 acres sold, not listed).....	6,602.36
Humboldt district (490 acres forfeited to the Regents, not listed).....	
San Francisco district (1,924.66 acres sold, not listed).....	1,724.51
Total listed.....	40,432.05
Sold, but not listed.....	5,260.75
	<u>45,692.80</u>

Total number acres of grant, 46,080; leaving yet to be applied for, 387.20 acres.

Public Building Lands.

Humboldt district.....	1,238.80
Visalia district.....	1,294.24
Stockton district (640.78 acres sold, not listed).....	1,582.85
San Francisco district (320 acres sold, not listed).....	none.
Marysville district.....	800.00
Total listed.....	4,900.89
Sold, but not listed.....	960.78
	<u>5,921.67</u>

Total number acres of grant, 6,400; leaving yet to be applied for, 478.33 acres.

FORFEITED SEMINARY LANDS.

Statement of patents issued by the University of California from April 29, 1872, to June 30, 1891:

Date of Patent.	Number of Patent.	Number of Location.	NAME OF PATENTEE.	Area.
1880—Aug. 23..	163	3	Francis L. Whitney	320
1882—Sept. 13..	300		Robert Gardner	320
1885—Jan. 27..	391	10	Henry Flock	160
1885—Aug. 28..	419	11	George Champlin.....	80
1886—April 28..	458	13	Charles W. Pierce.....	56.07
1887—June 29..	496	4	Mrs. E. J. Atkinson.....	320
1889—Sept. 17..	600	8	James H. Wilson and Warren Moore, assignees of Andrew Corbett.....	160
1891—Jan. 15..	753	12	Herbert Kraft, assignee of S. A. Gyle.....	80
			Total	<u>1,496.07</u>

The following correspondence is self-explanatory:

UNIVERSITY OF CALIFORNIA,
BERKELEY, June 13, 1891. }

Honorable Commissioner of the General Land Office, Washington, D. C.:

DEAR SIR: Under the provisions of an Act of Congress approved March 3, 1853, ten sections of land were granted for the erection of public buildings, and seventy-two sections for a seminary of learning.

Will you kindly inform me how much land has been selected and charged against the grants, and what steps we should take to acquire the balance not selected (if there is any remaining).

An immediate answer will greatly oblige.

Your obedient servant,

J. H. C. BONTÉ,
Secretary and Land Agent University of California.

DEPARTMENT OF THE INTERIOR, }
GENERAL LAND OFFICE, }
WASHINGTON, D. C., June 29, 1891. }

Mr. J. H. C. BONTÉ, Land Agent of the University, Berkeley, Cal.:

SIR: Replying to your letter of June 13, 1891, I would state that an examination of the records of this office shows that there have been selected by the State in satisfaction of the grant of seventy-two sections for seminary purposes, under Section 12 of the Act of Congress, approved March 3, 1853 (10 U. S. Stat. 244), 45,976.23 acres, of which 44,822.16 acres have been approved, leaving 1,154.07 acres unapproved. This fact was communicated to the Governor of the State in letter K, from this office, dated April 12, 1890, wherein he was advised that the grant was practically closed, the remaining deficit therein being 108.77 acres only.

Under the grant of ten sections (6,400 acres) for public buildings, by Section 13 of said Act, there have been selected and approved up to this time, as appears by the records, 5,099.08 acres; which amount is believed to include all the selections which have been transmitted to this office, leaving a deficit in the grant of 1,300.92 acres, which the State is still entitled to select.

Very respectfully,

F. H. CARTER,
Commissioner.

STATEMENT OF LANDS LISTED AND CHARGED AGAINST THE AGRICULTURAL
GRANT OF 150,000 ACRES, TO JUNE 30, 1891.

DISTRICT.	Number of Lists.	Number of Acres.	
San Francisco	1, Minimum	2,085.82	
San Francisco	2, Minimum	1,582.73	
San Francisco	3, Minimum	3,189.68	
San Francisco	4, Minimum	2,198.70	
San Francisco	5, Minimum	3,680.87	
San Francisco	6, Minimum	1,041.05	
San Francisco	7, Minimum	7,062.18	
San Francisco	8, Minimum	400.00	
San Francisco	9, Minimum	160.00	
San Francisco	10, Minimum	3,367.64	
San Francisco	11, Minimum	719.88	
San Francisco	12, Minimum	416.71	
San Francisco	13, Minimum	1,201.87	
San Francisco	14, Minimum	117.88	
San Francisco	15, Minimum	360.00	
San Francisco	15C, Minimum	860.82	
San Francisco	1, Double Minimum	9,628.64	
San Francisco	2, Double Minimum	1,466.20	
San Francisco	3, Double Minimum	226.73	
San Francisco	4, Double Minimum	3,094.61	
San Francisco	5, Double Minimum	1,797.25	
San Francisco	6, Double Minimum	4,214.62	
San Francisco	7, Double Minimum	240.00	
San Francisco	8, Double Minimum	80.00	
San Francisco	9, Double Minimum	2,225.98	
San Francisco	10, Double Minimum	120.00	
San Francisco	13, Double Minimum	1,906.85	
San Francisco	14A, Double Minimum	44.17	
San Francisco	14B, Double Minimum	120.00	
			53,629.38
Sacramento	2, Minimum	160.00	
Sacramento	3, Minimum	560.00	
Sacramento	4, Minimum	680.00	
Sacramento	5, Minimum	1,040.00	
Sacramento	7, Minimum	40.00	
Sacramento	8, Minimum	160.00	
Sacramento	3, Double Minimum	2,479.60	
Sacramento	5, Double Minimum	1,000.46	
Sacramento	6, Double Minimum	240.00	
Sacramento	8, Double Minimum	80.00	
Sacramento	9, Double Minimum	40.00	
Sacramento	10, Double Minimum	40.00	
			6,520.06
Los Angeles	1, Minimum	2,081.49	
Los Angeles	2, Minimum	160.00	
Los Angeles	3, Minimum	80.00	
Los Angeles	4, Minimum	323.34	
Los Angeles	5, Minimum	160.00	
Los Angeles	6, Minimum	120.00	
Los Angeles	7, Minimum	1,626.61	
Los Angeles	8, Minimum	1,459.33	
Los Angeles	1, Double Minimum	840.00	
Los Angeles	2, Double Minimum	1,001.81	
Los Angeles	3, Double Minimum	520.00	
Los Angeles	4, Double Minimum	171.54	
Los Angeles	9C, Double Minimum	360.00	
			8,904.12
Stockton	1, Minimum	2,320.00	
Stockton	2, Minimum	1,500.18	
Stockton	3, Minimum	4,545.89	
Stockton	4, Minimum	440.00	
Stockton	5, Minimum	160.00	
Stockton	6, Minimum	80.00	
Stockton	7, Minimum	40.00	
Stockton	4, Double Minimum	324.23	
Stockton	6, Double Minimum	40.00	
Stockton	7, Double Minimum	170.53	
			9,620.83

STATEMENT OF LANDS LISTED, ETC.—Continued.

DISTRICT.	Number of Lists.	Number of Acres.	
Humboldt.....	1, Minimum.....	2,720.00	13,679.22
Humboldt.....	2, Minimum.....	6,879.22	
Humboldt.....	3, Minimum.....	8,980.00	
Humboldt.....	4, Minimum.....	120.00	
Shasta.....	1, Minimum.....	10,975.10	17,337.25
Shasta.....	6, Minimum.....	40.00	
Shasta.....	1, Double Minimum.....	2,384.00	
Shasta.....	2, Double Minimum.....	2,669.83	
Shasta.....	3, Double Minimum.....	1,248.82	12,662.10
Shasta.....	5, Double Minimum.....	40.00	
Visalia.....	1, Minimum.....	1,001.25	
Visalia.....	2, Minimum.....	980.00	
Visalia.....	3, Minimum.....	1,890.00	22,988.15
Visalia.....	4, Minimum.....	401.60	
Visalia.....	6, Minimum.....	824.08	
Visalia.....	1, Double Minimum.....	2,773.11	
Visalia.....	2, Double Minimum.....	3,217.20	1,217.53
Visalia.....	3, Double Minimum.....	1,693.46	
Visalia.....	4, Double Minimum.....	241.40	
Visalia.....	5, Double Minimum.....	80.00	
Visalia.....	6, Double Minimum.....	80.00	1,440.00
Marysville.....	1, Minimum.....	2,400.00	
Marysville.....	2, Minimum.....	1,841.85	
Marysville.....	3, Minimum.....	280.00	
Marysville.....	4, Minimum.....	245.80	1,920.65
Marysville.....	5, Minimum.....	1,016.87	
Marysville.....	6, Minimum.....	280.00	
Marysville.....	7, Minimum.....	160.00	
Marysville.....	1, Double Minimum.....	4,312.96	149,919.29
Marysville.....	2, Double Minimum.....	10,889.94	
Marysville.....	3, Double Minimum.....	680.73	
Marysville.....	4, Double Minimum.....	280.00	
Marysville.....	5, Double Minimum.....	240.00	1,217.53
Marysville.....	6, Double Minimum.....	40.00	
Marysville.....	8, Double Minimum.....	320.00	
Susanville.....	1, Minimum.....	480.00	
Susanville.....	2, Minimum.....	537.53	1,217.53
Susanville.....	3, Minimum.....	40.00	
Susanville.....	4, Minimum.....	80.00	
Susanville.....	5, Minimum.....	40.00	1,440.00
Susanville.....	2, Double Minimum.....	40.00	
Bodie.....	1, Minimum.....	80.00	
Independence.....	2, Minimum.....	1,860.00	
Aurora.....	1, Minimum.....	1,920.65	1,440.00
Making a grand total of.....	.....	.....

UNIVERSITY LANDS REMAINING UNSOLD JUNE 30, 1891.

SECRETARY TO THE BOARD OF REGENTS.

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Location.	Description.	Section.	Township.	Range.	Area.	County.	Meridian.
1105	E. 1/4 of S.E. 1/4 - N.W. 1/4 of S.E. 1/4 - N.E. 1/4 of S.W. 1/4	23	24 S.	16 E.	160.00	Monterey	Mount Diablo.
1106	S.E. 1/4 of N.E. 1/4	10	24 S.	16 E.	40.00	Monterey	Mount Diablo.
1107	W. 1/2 of N.W. 1/4	26	24 S.	16 E.	80.00	Monterey	Mount Diablo.
707	S.E. 1/4 of N.W. 1/4	29	14 N.	16 W.	40.00	Mendocino	Mount Diablo.
1020	W. 1/2 of Lot 5.	3	12 N.	16 W.	40.00	Mendocino	Mount Diablo.
1473	N.W. 1/4 of S.E. 1/4	22	14 N.	16 W.	40.00	Mendocino	Mount Diablo.
1391	S.E. 1/4 of S.W. 1/4	22	13 N.	13 W.	40.00	Mendocino	Mount Diablo.
486	W. 1/2 of N.E. 1/4	20	8 S.	4 W.	80.00	San Mateo	Mount Diablo.
975	Lots 3 and 4.	4	14 S.	7 E.	80.60	San Benito	Mount Diablo.
797	S.W. 1/4 - S.E. 1/4 of N.W. 1/4 - S.W. 1/4 of N.E. 1/4	9	14 S.	25 E.	240.00	Fresno	Mount Diablo.
22	N.W. 1/4 of S.E. 1/4	28	14 S.	17 E.	80.00	Tulare	Mount Diablo.
22	W. 1/2	18	11 N.	21 W.	320.00	Kern	San Bernardino.
22	All of Section.	13	11 N.	21 W.	160.69	Kern	San Bernardino.
22	All of Section.	22	11 N.	21 W.	640.00	Kern	San Bernardino.
847	N.E. 1/4 of N.W. 1/4	24	11 N.	20 W.	640.00	Kern	San Bernardino.
788	N.E. 1/4 of N.W. 1/4	28	26 S.	17 E.	40.00	Kern	Mount Diablo.
1030	N.E. 1/4 of N.E. 1/4	6	11 N.	21 W.	320.80	Kern	San Bernardino.
1280	S.E. 1/4 - E. 1/4 of N.W. 1/4	4	25 S.	17 E.	41.60	Kern	Mount Diablo.
1280	S.E. 1/4 - E. 1/4 of N.E. 1/4 - W. 1/2 of N.W. 1/4	13	12 N.	17 E.	160.00	El Dorado	Mount Diablo.
1280	S.E. 1/4 - E. 1/4 of N.E. 1/4 - W. 1/2 of N.W. 1/4	24	12 N.	17 E.	560.00	El Dorado	Mount Diablo.
1466	S.E. 1/4 of S.W. 1/4	25	12 N.	17 E.	320.00	El Dorado	Mount Diablo.
1467	N.W. 1/4 of N.W. 1/4 - S.W. 1/4 of N.E. 1/4 - E. 1/2 of N.W. 1/4 - S.W. 1/4 of N.W. 1/4 -	2	9 N.	11 E.	40.00	El Dorado	Mount Diablo.
1467	N.W. 1/4 of N.W. 1/4 - S.W. 1/4 of N.E. 1/4 - E. 1/2 of N.W. 1/4 - S.W. 1/4 of N.W. 1/4 -	10	9 N.	11 E.	280.00	El Dorado	Mount Diablo.
1468	S.E. 1/4 of N.E. 1/4 - E. 1/2 of S.E. 1/4	9	9 N.	11 E.	120.00	El Dorado	Mount Diablo.
519	S.E. 1/4 of N.E. 1/4 - S.E. 1/4 of N.E. 1/4	2	9 N.	11 E.	80.00	El Dorado	Mount Diablo.
771	S.E. 1/4 of S.W. 1/4	11	9 N.	11 E.	120.00	El Dorado	Mount Diablo.
222	S.E. 1/4 of S.W. 1/4	20	14 N.	4 E.	80.00	Yuba	Mount Diablo.
289	N.E. 1/4 of S.E. 1/4	24	27 N.	14 E.	40.00	Lassen	Mount Diablo.
1728	S.W. 1/4 of S.E. 1/4 - S.E. 1/4 of N.E. 1/4	6	28 S.	18 E.	285.29	San Luis Obispo	Mount Diablo.
1472	S.W. 1/4 of N.E. 1/4	20	17 N.	12 E.	80.00	Nevada	Mount Diablo.
789 1/2	N.W. 1/4 of N.W. 1/4	33	21 S.	42 E.	40.00	Inyo	Mount Diablo.
871	Lot 7.	14	22 S.	42 E.	40.00	Inyo	Mount Diablo.
1377	N.E. 1/4 of N.E. 1/4	6	11 N.	11 W.	40.00	Mendocino	Mount Diablo.
1378	N.W. 1/4 of N.W. 1/4	25	27 S.	10 E.	40.00	San Luis Obispo	Mount Diablo.
	Lot 5.	3	30 S.	11 E.	40.00	San Luis Obispo	Mount Diablo.
	Lot 7.	12	17 N.	14 W.	40.00	Mendocino	Mount Diablo.
Total number of acres.					5,578.98		

STATEMENT OF PATENTS ISSUED

By the University of California, from April 23, 1872, to June 30, 1891.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1872-April 29.	1	201	Isaac Friedlander	2,720.00	2,720.00		
Dec. 30.	2		H. H. Warburton	80.00	80.00		
Dec. 30.	3	21	Newton J. D. Shartzer	120.00	120.00		
1873-Jan. 7.	4	287½	W. W. Hayes, H. Lobliner, and W. R. Palmer, Trustees of Choro Lodge, No. 168, I. O. F.	38.63	40.00		
Jan. 7.	5	104	Joseph M. Wood (canceled)				
April 21.	6	286	L. D. Latimer	40.00	40.00		
1874-Aug. 5.	7	104	F. C. Davis	160.00	160.00		
Aug. 5.	8	560	Albert Dibble	30.00	40.00		
Aug. 5.	9	22	Joseph Naphthaly	640.00	640.00		
Sept. 22.	10	313	Martin A. Britton	231.65	240.00		
Sept. 28.	11	179	Patrick Nolan	160.00	160.00		
Sept. 28.	12	180	Patrick Nolan	160.00	160.00		
Sept. 28.	13	302	Patrick Nolan	160.00	160.00		
Oct. 10.	14	862	Joseph A. Carrie	76.80	76.80		
Oct. 19.	15	792	Charles A. Perkins	40.00	40.00		
Nov. 28.	16	343	Jacob McKissick	80.00	80.00		
Dec. 28.	17	874	J. W. Haverstick	160.00	160.00		
1875-Jan. 7.	18	883	David N. Sherburn	160.00	160.00		
Jan. 4.	19	408	Charles Camden and William Magee			360.00	360.00
Jan. 7.	20	532	John Ellis and Erastus Wagoner			80.00	80.00
Jan. 16.	21	131	Elkan Wasserman				
Jan. 19.	22	343	Jacob McKissick (canceled)	160.00	160.00		
Jan. 19.	23	539, 637, 689, 640, 641, 642	R. G. Birby	360.00	360.00		
Jan. 19.	24	392	Frederick Clay	280.00	280.00		
Feb. 3.	25	602	Charles F. Potter	40.00	40.00		
Jan. 23.	26	868	A. J. Forrister	39.00	39.00		
Jan. 26.	27	1110	R. G. Flint	40.00	37.35		
Feb. 10.	28	1122	J. P. Andrews	40.00	40.00		
Mar. 9.	29	626, 892	Mendocino Lumber Company	400.00	399.78		
April 22.	30	892	Winford S. Whittaker	41.81	41.81		
May 11.							

July 19.	31	844	Jefferson Walker	640.00	640.00	640.00	54.51	54.51	40.00
Aug. 3.	32	520	Lindsey Carson.	40.00	40.00	40.00			
Aug. 8.	33	1208	Christopher Nelson	35.10	40.00	40.00			
Aug. 16	34	521, 523	Lindsey Carson.	200.00	200.00	200.00	54.51	54.51	40.00
Sept. 24.	35	667	W. H. Rogers						
Nov. 2.	36	298	Andrew Gehringer	219.39	219.39	219.39			
1876—Feb. 2.	37	184	Stephen G. Little.	160.00	160.00	160.00			
Feb. 2.	38	575	Isaac Rambo (canceled)						
Feb. 2.	39	103	Lewis Tyrone	160.00	160.00	160.00			
Feb. 19.	40	952	Albert Dibble.	155.74	155.74	155.74			
April 14	41	671	Elon W. Root				40.00	40.00	40.00
June 24.	42	136	August Henmie	25.00	40.00	40.00			
June 24.	43	679	W. W. Hayes	42.00	42.00	42.00			
June 24.	44	1294	Silas Coombs.	40.00	40.00	40.00			
Aug. 26.	45	678	Hosea H. Johnson.	80.00	80.00	80.00			
Sept. 7.	46	638	Robert G. Bixby	40.00	40.00	40.00			
Oct. 20	47	542	A. B. Forbes	80.00	80.00	80.00			
Dec. 27.	48	382	W. McReynolds	159.08	159.08	159.08			
1877—Jan. 5.	49	353	S. A. Gyle	40.00	40.00	40.00			
Feb. 19.	50	1173	R. E. Jack	40.00	40.00	40.00			
April 16.	51	840	Archiles S. Hicks	40.00	40.00	40.00			
Aug. 13.	52	1041	John Harrington.				76.26	76.26	40.00
Aug. 13.	53	291	John Heinlan				123.65	123.65	123.65
Aug. 13.	54	388	F. R. Farman						
Aug. 15.	55	295	C. D. Robinson.	15.32	40.00	40.00			
Oct. 27.	56	498	Alexander Ash				40.00	40.00	40.00
Oct. 27.	57	451	A. S. C. Cleek				40.00	40.00	40.00
Nov. 12.	58	169	B. B. Redding	16.65	40.00	40.00	160.00	160.00	160.00
Dec. 18.	59	282	William T. Coleman						
1878—Jan. 18.	60	881	J. C. Stoval, assignee of Mary A. Glotzback	160.00	160.00	160.00			
Jan. 18.	61	1089	H. J. Holmes (canceled)						
Jan. 18.	62	1040	William T. Garratt.						
Jan. 18.	63	1270	George C. Berry	40.00	40.00	40.00			
Jan. 31.	64	964	J. W. Johns	40.00	40.00	40.00			
Jan. 31.	65	310, 333	L. M., J. C., and J. L. Harl.	418.82	440.00	440.00			
Jan. 31.	66	1360	George C. Berry	80.00	80.00	80.00			
Jan. 31.	67	1142	J. C. Stoval (canceled)						
Feb. 4.	68	334, 362	Francis Boardman	190.70	200.00	200.00			
Feb. 4.	69	243, 240, 241	William T. Coleman, assignee of John P. Nelson				657.49	657.49	657.49
Feb. 4.	70	239	William T. Coleman.				320.00	320.00	320.00
Feb. 6.	71	1202, 1203, 1204	Commercial and Savings Bank of San José, assignee of Mark Howell.	2,000.00	2,000.00	2,000.00			
Feb. 7.	72		E. J. Baldwin (canceled).						

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1878—Feb. 9.	73	1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1126, 1127, 1128	James B. Haggin, assignee of Henry R. Williams and Thomas B. McCauley	1,530.00	1,530.00	4,230.66	4,230.66
Feb. 9.	74	498	W. W. Hayes (canceled)	546.91	546.91		
Feb. 25.	75	1278, 1281	E. J. Baldwin	400.00	400.00		
Mar. 18.	76	1136	Joseph Russ	7.20	40.00		
April 6.	77	1177	R. E. Jack	191.49	191.49		
April 15.	78	1388	Richard S. Floyd et al., Trustees of James Lick Trust.	40.00	40.00		
April 18.	79	1239	Robert Trait	80.00	80.00		
April 24.	80	373	Joseph J. Chandon, assignee of J. W. Brim	40.00	40.00		
April 24.	81	652	Joseph J. Chandon	60.43	60.53		
May 21.	82	1109	Edward Kruse, assignee of Frederick Helmke	160.00	160.00		
June 17.	83	390	Lydia M. Carter				
July 11.	84	279, 285	Thomas J. Price	80.00	80.00	274.12	280.00
Aug. 21.	85	318	Peter Murray, assignee of Wm. W. Johnston	40.00	40.00		
Aug. 21.	86	1318	Joseph Getz				
Aug. 29.	87	984, 985	O. W. Merriam, by virtue of a certain Sheriff's deed dated January 11, 1878	280.00	180.00		
Aug. 29.	88	1359	O. W. Merriam, by virtue of a deed signed by Amelia Burrage, administratrix	82.32	82.32		
Oct. 26.	89	91	Charles Wood	160.00	160.00		
Oct. 26.	90	1396	Theodore Leroy	40.00	40.00		
Oct. 30.	91	365	Alfred Green	236.34	236.34		
1879—Jan. 2.	92	926	Mark Hubbard, assignee of August Slack	40.61	40.61		
Jan. 2.	93	359	John Murphy	68.50	80.00		
Jan. 2.	94	1137	Joseph Russ	40.00	40.00		
Feb. 18.	95	1039	H. J. Holmes	80.00	80.00		
Feb. 18.	96	564	James Turnstead	5.99	40.00		
Mar. 12.	97	1009	Ann Alexander, assignee of William Liptrap	40.00	40.00		
Mar. 12.	98	385, 386	Stephen Reese	166.30	160.00		
Mar. 18.	99	356	Jackson Hart, assignee of Stephen Cooper	80.00	80.00		
May 29.	100	618	Thomas Newell, assignee of Robert Nixon			317.19	317.19
June 6.	101	1825	August Henne	34.10	40.00		
June 6.	102	236	B. F. Langford			40.00	40.00

June 6.	103	769	Richard T. Pope				78.83	78.83	
June 6.	104	891, 972, 973	M. Brandenstein				520.50	520.50	
June 6.	105	682	Dunning Gibbons				40.00	40.00	
June 6.	106	782, 672, 1168	John Tuohy				860.00	860.00	
July 1.	107	525	L. Godechaux				320.00	320.00	
July 1.	108	1283	Edward McDonough				40.00	40.00	
July 1.	109	855	Samuel Danville				160.00	160.00	
July 1.	110	369	David H. Allen				40.00	40.00	
July 1.	111	410	D. N. Friesleben				36.82	36.82	
July 1.	112	418, 511	G. W. Murdock				240.00	240.00	
July 1.	113	422	Thomas J. Kirkpatrick				480.00	480.00	
July 1.	114	433	Cynthia E. Sanborn				40.00	40.00	
July 1.	115	457	M. A. Reager				80.00	80.00	
July 1.	116	458	C. B. Ashurst				48.00	48.00	
July 1.	117	500	Thomas M. McClanahan				80.00	80.00	
July 1.	118	501, 503, 504, 507, 508, 709	William B. Parker and Francis Houghton				1,536.67	1,536.67	
July 1.	119	529	F. R. Lofton, assignee of Eli Hackett				80.00	80.00	
July 1.	120	582	E. R. Lowe, assignee of G. W. Hiatt				35.89	35.89	
July 1.	121	590, 591	Richard M. Sparks				80.00	80.00	
July 1.	122	924	James L. Wilbur				80.00	80.00	
July 1.	123	1014	C. P. Berry				80.00	80.00	
July 1.	124	1035	James H. Street				80.00	80.00	
July 1.	125	1141	John Finnell, assignee of J. Finnell				80.00	80.00	
July 1.	126	1474	G. G. Briggs				160.00	160.00	
July 1.	127	616	Edward Hallett				7.40	7.40	
July 2.	128	192, 194	Thompson, Patchett, and Grierson, trustees, etc.				321.25	321.25	
July 2.	129	588	Thompson, Patchett, and Grierson, trustees, etc.				40.00	40.00	
July 81.	130	653	John T. Herrick				80.00	80.00	
Aug. 7.	131	1464	W. J. Hildreth				81.82	81.82	
Aug. 7.	132	986	James Weyand, assignee of W. H. Bias				80.00	80.00	
Aug. 13.	133	513, 690	C. Burrell, assignee of F. Hutchinson				80.00	80.00	
Sept. 2.	134	610	William Lewiston, assignee of B. H. Brooks				80.00	80.00	
Sept. 19.	135	1282	Miller & Lux				38.45	38.45	
Oct. 18.	136	245	W. T. Coleman, assignee of L. D. Simpson				120.00	98.64	
Oct. 21.	137	1214, 1291	John M. Neville				160.00	160.00	
Oct. 21.	138	251	H. Block, assignee of C. C. Booktus				160.00	160.00	
Oct. 21.	139	824	J. H. Logan				160.00	160.00	
Oct. 21.	140	592, 793, 794	Gardner, Pugh, and Haddick, assignees of E. Eaven-						
Oct. 21.	141	1449	Mrs. Allie M. Pearson, assignee of George H. Perrin				80.00	80.00	
Oct. 21.	142	770	A. L. Huyck				40.00	40.00	
1880-Jan. 17.	143	597	William McKee				12.22	12.22	
Jan. 17.	144	535	John Sites				40.00	40.00	
Jan. 17.	145	531, 807	Julius Weyand				160.00	160.00	
Jan. 17.	146	1383	Frederick Bohm				40.00	40.00	
Jan. 17.	147	522	L. Carson, assignee of W. W. Johnston				80.00	80.00	

1880

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1880—Jan. 17--	148	1111	Jeremiah Morgan			40.00	40.00
Jan. 17--	149	1151	Santa Clara Valley Mill and Lumber Company, assignee of J. M. Wood			40.00	40.00
Jan. 17--	150	1373	Matthew Aaron and Abraham Kiser, assignees of A. A. Burgess	34.21	40.00		
Jan. 17--	151	841, 646, 596, 1002, 1003	Santa Clara Valley Mill and Lumber Company, assignee of W. P. Dougherty			402.46	402.46
Jan. 17--	152	307	Charles S. Lohse			40.00	40.00
Jan. 17--	153	372	James Lydon	27.41	40.00	40.00	40.00
Feb. 9--	154	1129	E. L. Bradley			160.00	160.00
Feb. 9--	155	445	Ambrose Lyall			160.00	160.00
Feb. 9--	156	414	Richard McInespy	10.32	40.00		
Feb. 19--	157	1370, 1377	Higgins & Collins, assignees of Wille & Conway	160.00	160.00		
Aug. 23--	158	833	M. Brandenstein, assignee of John Cook			50.86	50.86
Aug. 23--	159	1181	Alexander Robertson	40.00	40.00		
Aug. 23--	160	767	George E. Long, assignee of F. P. F. Temple			94.09	94.09
Aug. 23--	161	748	Jay Burnap, assignee of Hy. M. Mitchell			160.00	160.00
Aug. 23--	162	1332, 1333, 1335, 1336	Lewis Garvey and Edward S. Armes	2,080.00	2,080.00		
Aug. 23--	163	3	Francis L. Whitney (Seminary, 820 acres)				
Sept. 4--	164	548, 549	Sarah Margaret Simpson				
Sept. 4--	165	1462	Simon B. Pulliam	240.00	240.00		
Oct. 9--	166	1326	Geo. C. Berry	40.00	40.00		
Nov. 13--	167	1016, 1016 ¹	James W. Kaseburg	80.00	80.00		
Nov. 13--	168	1385	Joseph Thompson			80.00	80.00
Nov. 13--	169	406, 407	Henry C. Wilson			27.98	40.00
Nov. 13--	170	541	P. M. Cleghorn (canceled)			423.40	423.40
Nov. 13--	171	593	David Robertson				
Nov. 13--	172	246	Pacific Mutual Life Insurance Company of California, assignee of Charles C. Bockius			40.00	40.00
Nov. 13--	173	605	Phillips Hefner			40.00	40.00
1881—Jan. 17--	174	493	H. S. Graves			182.00	182.00
Jan. 17--	175	515	H. S. Graves			80.00	80.00
Jan. 17--	176	492	H. S. Graves			80.00	80.00
Jan. 17--	177	491	H. S. Graves			80.00	80.00
Jan. 17--	178	544	H. S. Graves			80.00	80.00

Jan. 17	551	H. S. Graves	40.00	67.78	67.78
Jan. 17	546	H. S. Graves	40.00	240.00	240.00
Jan. 17	512	J. L. Wilbur	40.00	80.00	80.00
Jan. 17	554	J. L. Wilbur	40.00	240.00	240.00
Feb. 10	183	Jerome Lincoln, assignee of Sven Alstrom	40.00		
Feb. 10	184	Guadalupe Mill Company, assignee of Benj. F. Warren	40.00		
Feb. 10	185	Clear Lake Waterworks, assignee of John Bensley	159.71		
Feb. 17	186	Calvin S. Kelley	40.00		
Feb. 17	187	Horatio P. Livermore	40.00		
Feb. 17	188	Geo. T. Hawley, assignee of Wm. H. Van Arsdale	720.00		
Feb. 17	189	Geo. T. Hawley, assignee of Wm. H. Van Arsdale	640.00		
Feb. 24	190	Thomas Mathews	40.00		
Mar. 6	191	Thomas Lynch	40.00		
Mar. 6	192	Robert G. Bixby	40.00		
Mar. 12	193	Calvin S. Kelley and David T. Farnsworth, assignees of Robert Shearer	285.27		
Mar. 12	194	J. W. Potts, assignee of L. Brooks	120.00		
Mar. 12	195	E. H. Duncan, assignee of Louis Harbers	80.00		
Mar. 17	196	William P. English	120.00		
Mar. 17	197	Lauchlin McDonald	48.21		
Mar. 24	198	Henry Hutchinson, assignee of Salena G. Truett	80.00		
Mar. 28	199	Isaac A. Cooper	366.33		
Mar. 28	200	Henry Miller and C. Lux, assignees of Martin and J. Luther	22.32	40.00	40.00
Mar. 28	201	Miller & Lux, assignees of C. Lux		159.25	159.25
Mar. 28	202	Miller & Lux, assignees of C. Lux		588.62	588.62
Mar. 29	203	Jeremiah Rees		47.69	47.69
April 7	204	N. W. Chittenden		52.15	52.15
April 7	205	Hiram Briggs		47.09	47.09
April 7	206	James H. Laughlin	40.00		
April 7	207	Hiram Briggs	80.00		
April 7	208	Connolly Conn, assignee of Duncan McNee	80.00		
April 16	209	Isaac Rambo	40.00		
April 16	210	John D. Rosenberger		80.00	80.00
April 19	211	Thomas and Patrick Kelly, assignees of Sam'l B. Martin	40.00		
April 27	212	J. A. Blasingame, assignee of W. T. Cole	160.00	25.60	40.00
May 7	213	Robert Gordon	160.00		
May 12	214	Void		40.00	40.00
May 14	215	J. C. Stoval	240.31		
May 14	216	Henderson Brown	240.31	160.00	160.00
May 14	217	Warren Bryant, assignee of Jorgen Christensen		40.00	40.00
May 14	218	Void			
May 14	219	Peter Turner		40.00	40.00
May 14	220	William Cameron		120.00	120.00

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1881—May 14—	221	339	José G. Sanchez	—	—	40.00	40.00
May 14—	222	1139	E. J. Breen	—	—	120.00	120.00
May 14—	223	1316, 1317	Thomas Turner	—	—	80.00	80.00
May 21—	224	1008	William A. Brown	80.00	80.00	80.00	80.00
May 27—	225	768	Frank McCoppin, assignee of Thomas C. Van Ness	40.00	40.00	—	—
June 10—	226	1340	L. Peres	—	—	11.60	40.00
June 21—	227	1000, 1390, 1445, 1151½	Santa Clara Valley Mill and Lumber Company, assignee of William F. Dougherty and J. M. Wood	320.00	320.00	—	—
June 22—	228	648, 762, 759½, 760½, 761½	Pacific Lumber Company, assignee of Mary E. Butterworth	640.22	640.22	—	—
June 22—	229	223, 223½, 225, 226, 228, 230, 232, 235	Pacific Lumber Company, assignee of Mary E. Butterworth	2,387.40	2,387.40	—	—
June 22—	230	231, 233	Pacific Lumber Company, assignee of Mary E. Butterworth	2,172.87	2,191.81	—	—
June 22—	231	234, 237	Pacific Lumber Company, assignee of Mary E. Butterworth	1,088.77	1,088.77	—	—
June 22—	232	1375	S. M. Knowles	40.00	40.00	—	—
June 22—	233	317	John Green	40.00	40.00	—	—
June 30—	234	1440, 1483, 1484	J. C. Skoval	120.00	120.00	—	—
June 30—	235	577, 578	E. Archer, assignee of W. C. Archer	80.00	80.00	—	—
July 1—	236	844, 945	Peter C. Van Allen	80.00	80.00	—	—
July 11—	237	228	Pacific Lumber Company, assignee of Mary E. Butterworth	638.18	638.18	—	—
July 12—	238	994, 997	Milton Mining and Water Company, assignee of S. F. Butterworth	480.00	482.56	—	—
July 12—	239	996, 996½, 998, 998½	North Bloomfield Gravel Mining Company, assignee of S. F. Butterworth	960.00	960.46	—	—
July 16—	240	1407	James B. Haggin, assignee of Horatio P. Livermore	—	—	121.40	121.40
July 20—	241	624	S. W. Randall, assignee of L. F. Moulton	—	—	40.00	40.00
July 20—	242	494	Marshall N. Bryan	—	—	160.00	160.00
July 20—	243	684	Marshall N. Bryan	—	—	160.00	160.00
July 20—	244	651	Cynthia E. Sanborn	—	—	40.00	40.00
July 20—	245	679	Jacob W. Babcock	—	—	169.81	169.81
July 20—	246	565, 566, 567	W. W. Durham	—	—	116.91	179.31

Aug. 16.	247	198, 199	Benjamin N. Hartson	980.00	980.00	80.00	80.00
Aug. 16.	248	902, 903	Valentine Grant				
Aug. 26.	249	244	Pacific Lumber Company, assignee of Mary E. But- terworth				
Sept. 14.	250	92	James Ripperdam	613.06	613.06		
Sept. 14.	251	1452	James M. Lea	160.00	160.00		
Sept. 17.	252	427	Jasper Harrell	40.00	40.00	110.00	110.00
Sept. 28.	253	1897	Jasper Harrell	40.00	40.00		
Oct. 12.	254	980	E. C. Dunning, assignee of Owen Wright			80.00	80.00
Oct. 12.	255	1230	J. Murielita, assignee of R. de Clairmont	80.00	80.00		
Oct. 19.	256	1888, 1889	P. N. Emerson	80.00	80.00		
Oct. 19.	257	452	Frederick Tarke			160.00	160.00
Nov. 2.	258	1178	John H. Wise and Thomas Dunningan, assignees of Joseph Carter	40.00	40.00		
Dec. 17.	259	670, 685, 686, 687	Thomas H. Howell	79.69	79.69	825.20	825.20
1882—Jan. 13.	260	221	George A. Lamont, assignee of J. M. Wood				
Jan. 21.	261	1478	John F. Todd and Robert Gibson, assignees of G. W. Heald	89.54	89.54		
Jan. 21.	262	1223	Heirs of G. W. Owen, deceased	80.00	80.00		
Jan. 21.	263	711	H. C. Wilson	83.30	83.30	711.78	711.78
Jan. 26.	264	787	Heirs of James P. Smith, deceased				
Jan. 26.	265	906	J. H. McNee, assignee of W. W. Johnston	127.51	127.51		
Feb. 10.	266	1348	Joseph Korbell, assignee of C. C. Hunger	40.00	40.00	120.00	120.00
Feb. 16.	267	1076, 1076, 1078	J. H. Logan			80.00	80.00
Feb. 16.	268	1072	W. F. Peabody			40.00	40.00
Feb. 17.	269	1026	Edmund Jones				
Feb. 28.	270	1233	John D. Rosenberger	40.83	40.83		
Mar. 9.	271	264	I. A. Staller, assignee of S. Morton	12.23	12.23		
Mar. 16.	272	172	L. Lamberton	640.00	640.00		
April 3.	273	1419	John T. Jones	40.00	40.00		
May 16.	274	1439	W. S. Bayton, assignee of J. W. Slater	40.00	40.00		
May 17.	275	557	Walker & Menzies, assignee of G. Butchart	80.00	80.00		
May 31.	276	655, 656, 657, 658	Charles Crocker, assignee of C. H. Huffman	40.00	40.00	640.00	640.00
June 17.	277	905	J. H. McNee, assignee of W. W. Johnston			106.84	106.84
June 17.	278	877	Thomas W. Moore	80.00	80.00		
June 17.	279	1347	John Harford			17.51	40.00
June 17.	280	331	Charles Crocker	240.00	240.00		
June 17.	281	1031	R. E. Jack	120.00	120.00		
June 17.	282	1180	R. E. Jack	219.58	219.58		
July 20.	283	598	R. G. Rowley			40.00	40.00
July 20.	284		Luther W. Phillips (canceled)				
July 20.	285	524, 525	L. Godchaux	1,241.28	1,241.28		
July 20.	286	424	M. Brandenstein	772.96	772.96		
July 20.	287	744	M. Brandenstein and L. Godchaux, assignees of M. J. Luther			120.00	120.00

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1882—July 20.—	288	589	E. R. Lowe, assignee of G. M. Hiatt.			120.00	120.00
July 23.—	289	966	Hugh A. Logan	80.00	80.00		
July 28.—	290	795, 943	Cynthia E. Sanborn.			120.00	120.00
July 28.—	291	825	J. B. Randol, assignee of Frederick Crichton			40.00	40.00
July 28.—	292	1331, 1334	Alicia M. Berry, assignee of George C. Berry	630.00	630.00		
July 28.—	293	789	J. B. Haggin, assignee of Martin White and W. B. Carr.			40.00	40.00
July 28.—	294	1435	Isaac Maltby			80.00	80.00
Aug. 8.—	295	649	William Moran			80.00	80.00
Aug. 8.—	296	1417	Enno F. Blohm			80.00	80.00
Sept. 6.—	297	1616	R. H. McDonald	40.00	40.00	40.00	40.00
Sept. 6.—	298	800, 837	John Reynolds.				
Sept. 6.—	299	750, 977	W. H. Bias, assignee of J. L. Garrett, the latter assignee of W. Purdy	40.63	40.63	80.00	80.00
Sept. 7.—	300	Seminary	Robert Gardner (320 acres)			61.33	61.33
Sept. 15.—	301	1232	Henry W. Stubben			40.00	40.00
Oct. 13.—	302	866	Alexander Fraser, assignee of Emanuel L. Reed.	120.00	120.00		
Nov. 17.—	303	1636	Alfred G. Stonester	80.00	80.00		
Nov. 17.—	304	1600, 1601, 1602, 1603, 1604, 1608, 1609, 1610	Horatio P. Livernore	320.00	320.00		
Dec. 14.—	305	583	Martin A. Reager			64.52	64.52
Dec. 14.—	306	963	Charles W. Creighton			38.56	40.00
Dec. 15.—	307	403, 601	Herbert Kraft, assignee of John Freeman			200.00	200.00
Dec. 15.—	308	1593	L. J. Cummings	39.61	40.00		
Dec. 15.—	309	1596	Stephen Reese			40.00	
1883—Jan. 13.—	310	1588, 1637, 1638	J. C. Skoval	120.00	120.00		
Jan. 15.—	311	623	C. Cabot			12.90	40.00
Feb. 2.—	312	886	A. M. Basley			40.00	40.00
Feb. 13.—	313	713, 714, 749, 872	M. N. Bryan			588.50	588.50
Feb. 13.—	314	669	D. K. Zumwalt			40.00	40.00
Feb. 14.—	315	471	John Barry			160.00	160.00
Feb. 20.—	316	673	Los Angeles County Bank, assignee of P. A. Raynor.			480.00	480.00
Feb. 21.—	317	641	P. M. Cleghorn.			320.80	320.00
Feb. 24.—	318	562	Luther H. Phillips			47.37	47.37
Feb. 24.—	319	386	C. H. Hall			80.00	80.00
Mar. 29.—	320	824	J. H. Logan	160.00	160.00		
April 16.—	320	824	J. H. Logan				

April 13..	321	1444	William Heeser.	40.00	40.00	160.00	160.00
May 18..	322	570	Bank of California, assignee of Wm. S. Chapman.	160.00	160.00	160.00	160.00
May 18..	323	1670	William J. Pleasant.	160.00	160.00	160.00	160.00
June 11..	324	1594, 1696	Charles Stubbs	80.00	80.00	80.00	80.00
June 11..	325	1683	Thomas G. Rodgers	40.00	40.00	160.00	160.00
June 11..	326	1672	C. J. Beerstecher	160.00	160.00	160.00	160.00
June 11..	327	1132	Ed. F. Hamilton	40.00	40.00	160.00	160.00
June 11..	328	1580	Heirs of David Rowles.	160.00	160.00	160.00	160.00
June 19..	329	695, 696, 697, 698, 699, 701, 1192, 1197, 1198, 1199, 1216, 1220, 1221, 702, 776, 783, 949	Jesse D. Carr	836.66	879.04	162.77	162.77
June 20..	330	1454, 1456	Sophia Casey	964.70	964.70	80.00	80.00
June 23..	331	404	Charles McLaughlin, assignee of Thos. Hildreth	40.00	40.00	102.65	102.65
June 23..	332	951	Samuel Harding	40.75	40.75	279.10	279.10
June 26..	333	1056	G. W. Humphrey	40.00	40.00	120.00	120.00
June 28..	334	1547	J. S. Brackett	40.00	40.00	63.65	63.65
July 2..	335	1550	James M. Hickson	40.00	40.00	40.00	40.00
July 5..	336	1565, 1566	Rench Angele	200.00	200.00	240.00	240.00
July 6..	337	1289	James W. Humphrey	40.00	40.00	80.00	80.00
July 11..	338	1641	William Kennedy	40.00	40.00	113.35	113.35
July 14..	339	1907	Michael Pfeiffer	40.00	40.00	240.00	240.00
July 23..	340	1896	Charles Oppenlander	40.00	40.00	80.00	80.00
July 28..	341	1743	William Cantilow	40.00	40.00	113.35	113.35
July 28..	342	979, 980	John Sites	200.00	200.00	240.00	240.00
Aug. 7..	343	1051, 1052, 1146	John Callahan	40.00	40.00	80.00	80.00
Aug. 22..	344	294	Helen Weir, assignee of W. H. Lyons.	39.63	40.00	113.35	113.35
Aug. 23..	345	1626	H. A. Logan	180.73	180.73	240.00	240.00
Sept. 1..	346	1028	H. Perkins, assignee of L. Lineberger	40.00	40.00	80.00	80.00
Sept. 14..	347	555, 556	Robert S. Hardin	180.73	180.73	240.00	240.00
Sept. 14..	348	981	Elias Jacob	40.00	40.00	80.00	80.00
Sept. 24..	349	1575, 1592	Absher E. Maxey	163.37	163.37	240.00	240.00
Sept. 24..	350	357, 358	Sperry & Perry	560.00	560.00	240.00	240.00
Sept. 25..	351	645	Dolores Herrera, assignee of J. P. Knapp	40.00	40.00	113.35	113.35
Sept. 26..	352	1490	J. W. Garther	40.00	40.00	240.00	240.00
Oct. 13..	353	393	S. B. Emerson	240.00	240.00	40.00	40.00
Oct. 26..	354	308	C. T. Elliott, assignee of D. Beaumont.	40.00	40.00	5,090.17	5,090.17
Nov. 3..	355	1356	C. A. Ledford and David Elkins	40.00	40.00	80.00	80.00
Nov. 5..	356	717, 717 1/2, 718, 719, 720, 720 1/2, 720 1/2, 721, 721 1/2, 722, 723, 724, 725, 727, 728, 729, 730, 731, 731 1/2, 732, 733, 734, 735, 736, 736 1/2, 737, 738, 738 1/2, 739, 740, 740 1/2, 741, 742, 742 1/2, 743, 743 1/2, 746, 834, 835, 836, 887, 888, 859, 960, 1033, 1054, 1055	H. Miller and C. Lux, assignees of Jas. and M. Luther.	5,090.17	5,090.17	80.00	80.00

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1883—Dec. 12	357	1436	Daniel M. Copey	80.00	80.00		
1884—Feb. 5	358	1662, 1663	Henry Marden	80.00	80.00		
Feb. 5	359	1711, 1712	Edward Kruse	80.00	80.00		
Feb. 5	360	1645	James D. Bowen	40.00	40.00		
Feb. 5	361	1686	Stephen Reese	40.00	40.00		
Feb. 6	362	1280	W. Hamilton, assignee of P. P. Martin			40.00	40.00
Feb. 6	363	1605	H. F. Fairbanks	80.00	80.00		
Feb. 7	364	470, 1237, 1259	George W. Thompson	120.00	120.00		
Feb. 9	365	444	C. W. Clarke, assignee of J. S. Williams			680.00	678.73
Feb. 9	366	1073, 1074	M. C. Clark			180.08	180.08
Feb. 9	367	1186½	Jesse D. Carr	120.39	120.39		
Feb. 16	368	1571	G. Staacke	830.04	830.04	80.00	80.00
Feb. 18	369	1187½, 1215, 1217, 1218, 1219, 1238	Jesse D. Carr				
Mar. 22	370	837	Jorgen Christensen	40.00	40.00	40.00	40.00
Mar. 22	371	1732	Linaften J. Hall				
April 4	372	922	P. N. Aaronson and A. Galland, assignees of Edmond Fields	40.00	40.00	40.00	40.00
April 9	373	1500	J. McCausland, assignee of D. W. Walker	80.00	80.00		
May 13	374	1715	Price A. Jacobs			120.00	120.00
May 16	375	441	Hy Hawley, assignee of F. E. Horn			160.00	160.00
June 28	376	536	Jacob Rambo, assignee of F. C. Graves	46.19	46.19		
July 9	377	323	J. B. DeJarnath, assignee of John Cheney			40.00	40.00
July 21	378	1706	Sarah Ward			120.00	120.00
Aug. 16	379	1453	James Bryden, assignee of L. B. Ayers	80.00	80.00		
Aug. 16	380	1501	James Bryden	51.74	51.74		
Sept. 4	381	823	J. H. Logan				
Sept. 4	382	1644	J. W. Mastick				
Sept. 8	383	1448	J. G. Estrudillo and F. Pico, assignees of H. M. Johnson			41.96	41.96
Sept. 4	384	569	S. Danville, assignee of S. Danville and J. Hagerly			164.10	164.10
Sept. 15	385	1146	Massey Thomas				
Dec. 22	386	1708	Charles W. Howard	40.00	40.00	80.00	80.00
1885—Jan. 14	387	594	G. G. Kimball			160.00	160.00
Jan. 14	388	1735	William C. Greenleaf, assignee of H. N. Maybe	36.31	40.00		
Jan. 27	389	1647	Connolly Conn	40.00	40.00		

Jan. 27.	390	1140	H. P. Eakle, assignee of Charles E. Stewart	160.00	165.80	80.00	80.00
Jan. 27.	391	10 (Seminary)	Henry Flock (160 acres)				
Mar. 16.	392	1162	J. B. Haggins, assignee of James R. Watson			80.00	80.00
Mar. 16.	393	489	W. B. James	40.00	40.00	40.00	40.00
Mar. 23.	394	384	H. Lewis, assignee of C. W. Rees			320.00	320.00
Mar. 23.	395	671	Heirs of J. H. Keyes, assignees of J. W. Huffaker and T. Brewer			40.00	40.00
Mar. 23.	396	1264	R. F. Martin				
April 2.	397	689	Heirs of David Rowles			40.00	40.00
April 2.	398	693	H. K. Boomer			40.00	40.00
April 2.	399	677, 974, 1684, 1686, 1688, 1687	J. W. Cooper	418.13	418.13	679.30	679.30
April 2.	400	1768	J. R. Garner	35.56	40.00		
April 2.	401	1779	J. M. McDonald	160.00	160.00		
April 18.	402	1364, 1366	Alexander Duncan	230.10	233.80		
April 18.	403	956, 967, 1010, 1284, 1285, 1286	S. A. Gyle	320.00	320.00		
April 24.	404	1614	H. Miller and C. Lux, assignees of Jacob Luther			40.00	40.00
May 15.	405	261	V. D. Moody, assignee of A. B. Conley			40.00	40.00
May 15.	406	848	William Rice, assignee of estate of A. Ruppert			80.00	80.00
May 15.	407	93	S. G. Little	160.00	160.00		
May 21.	408	1176	R. E. Jack			79.22	79.22
May 21.	409	538	C. H. Huffman, assignee of J. D. Hyde			40.00	40.00
June 12.	410	526, 527, 668	N. Simpson			240.00	240.00
June 12.	411	1671	A. Kinney			40.00	40.00
June 12.	412	391	R. McHenry	40.00	40.00		
June 23.	413	607	W. C. Turner, assignee of W. H. Lyons	27.48	40.00		
July 2.	414	1753	W. H. Mead			27.42	40.00
July 2.	415	1762, 1807	William P. Johnson			440.00	440.00
July 30.	416	1631	A. W. Von Schmidt			40.00	40.00
Aug. 5.	417	780	Hiram Gilmore				
Aug. 5.	418	1744	John McA. Brown	80.00	80.00		
Aug. 28.	419	11 (Seminary)	George Champlin (80 acres)	40.00	40.00		
Aug. 28.	420	1651	Andrew J. Myers, assignee of F. T. Shirwin	158.97	158.97		
Sept. 17.	421	672	Judah Baker, Jr.			123.20	123.20
Sept. 17.	422	784	Martin Griffin			80.00	80.00
Sept. 17.	423	252	M. and T. Spence, assignees of Charles J. Bockius			80.00	80.00
Sept. 17.	424	1310	Robert G. Flint			120.00	120.00
Sept. 28.	425	620	Jacob Doty, assignee of Frederick Piel			120.00	120.00
Oct. 8.	426	1021	John Proctor, assignee of Frank Kockler			40.00	40.00
Oct. 8.	427	1412	B. V. Sargent			40.00	40.00
Oct. 8.	428	1458	John F. Barrie			80.00	80.00
Oct. 14.	429	1023	Charles Becker, assignee of Edward A. Belcher			160.00	160.00
Oct. 13.	430	361	Carl G. Munich, assignee of Duncan McNee	120.00	120.00		
Oct. 26.	431	1142	J. C. Stoval, assignee of Mary A. Glotzbach	120.00	120.00		
Nov. 9.	432	1136	Joseph Russ				
Dec. 5.	433	999	E. M. Ross			40.00	40.00

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1885—Dec. 5.	434	1170	John E. Jackson, assignee of E. M. Ross	—	—	80.00	80.00
Dec. 5.	435	1722	The Napa Consolidated Quicksilver Mining Company, assignee of M. G. Rhodes	40.00	40.00	—	—
Dec. 8.	436	619	Simon Newman	56.48	56.48	—	—
Dec. 22.	437	772, 773, 947	M. J. McGovern, assignee of John McGovern	—	—	204.09	204.09
Dec. 23.	438	1569	John Boggs	—	—	40.00	40.00
Dec. 28.	439	476	John Boggs, assignee of M. L. Chandler	—	—	160.00	160.00
1886—Jan. 9.	440	453	John Boggs, assignee of M. L. Chandler	—	—	320.00	320.00
1885—Dec. 2.	441	1160	Morris Goldtree, assignee of Maria Concepcion B. de Munos	—	—	—	—
1886—Jan. 5.	442	1552	Charles L. French, assignee of James K. Lynch	40.00	40.00	—	—
Jan. 8.	443	400, 409, 413	Henry C. Hawley, assignee of Amos H. Wilbur	40.07	40.07	—	—
Jan. 8.	444	1042	Charles Pettit, assignee of G. W. Colby	460.00	560.00	—	—
Jan. 16.	445	517	David Burns, assignee of G. T. Thornton	40.00	40.00	—	—
Jan. 16.	446	1309, 1312	David Williams	40.00	40.00	—	—
Feb. 9.	447	694	D. O. Daggett, assignee of F. H. Hawley and Charles G. Bookius	321.05	321.05	—	—
Feb. 17.	448	1456, 1457	Mary Emma Chadbourn, assignee of Henry Baker	80.00	80.00	80.00	80.00
Mar. 16.	449	909	James Clark	—	—	80.00	80.00
Mar. 24.	450	1160	William Jopson	—	—	46.63	46.63
Mar. 24.	451	1306	Joseph Korbel	40.00	40.00	—	—
April 14.	452	1682	David Wooster	79.88	79.88	—	—
Mar. 30.	453	335	Estate of Simon Zimmerman, deceased	—	—	83.91	83.91
April 3.	454	1760, 1764, 1755	Anthony Maraschi	349.57	349.57	—	—
April 3.	455	1717, 1718	Joseph Alexander	80.00	80.00	—	—
April 3.	456	1646	John Reynolds	—	—	40.00	40.00
April 14.	457	499	John Boggs, assignee of George Champlin	—	—	320.00	320.00
April 28.	458	13 (Seminary)	Charles W. Price (56.07 acres)	—	—	—	—
May 17.	459	1131	James Traynor	—	—	40.00	40.00
May 17.	460	1710	F. F. Marx	40.00	40.00	—	—
June 7.	461	606	Estate of Benjamin Flint, deceased	—	—	230.62	230.62
June 21.	462	308	Estate of Gabriel Little, deceased	40.00	40.00	—	—
June 21.	463	354, 395	The Buena Vista Petroleum Company, assignee of J. O. Lovejoy	730.00	730.00	—	—

July 22	464	45, 52, 61	Richard Kinnan and Thomas B. Rickey, assignees of Jesse N. Summers	1,920.65	1,920.65	160.00	100.00
July 24	465	1323	The South Yuba Water and Mining Company, assignee of E. L. McClure	68.79	68.79	80.00	80.00
July 24	466		The South Yuba Water and Mining Company, assignee of E. L. McClure			80.00	80.00
Aug. 13	467	543	Walter M. Jeffries, assignee of Nathan Goldtree				
Aug. 13	468	1034, 1666	The Northern California Land Company, assignee of W. H. Parks, Jr.	68.79	68.79	80.00	80.00
Sept. 25	469		Amendatory of patent 463			80.00	76.13
Sept. 25	470	676	T. M. Ely			80.00	40.00
Nov. 1	471	1487	S. H. Seymour, assignee of Isaac N. Stapp	80.00	80.00	40.00	40.00
Nov. 30	472	1768	Laughlin McDonald				
Nov. 30	473	1562, 1563, 1607	H. A. Logan	118.54	120.00	40.00	200.00
Nov. 30	474	1714	H. A. Logan	40.00	40.00	40.00	40.00
Nov. 30	475	1524, 1536	Wesley Burnett			200.00	40.00
Nov. 30	476	1767	James Liddle			40.00	40.00
Nov. 30	477	1795	S. M. Smoot			40.00	40.00
Nov. 30	478	1625	Edward McDonough	40.00	40.00		
Jan. 11	479	1688	Michael Pfeiffer	80.00	80.00		
Jan. 11	480	1587, 1627	H. S. McMichael				
Jan. 11	481		Canceled				
Jan. 20	482	1740	William M. Scott	40.00	40.00		
Feb. 9	483	1115	Albert Dibble			224.51	224.51
Feb. 9	484	1117, 1119	Albert Dibble			81.83	88.56
Feb. 9	485	1120	Albert Dibble			72.69	72.69
Feb. 10	486	1423, 1430	John H. Fowler	77.13	80.11		
April 2	487	873, 874, 876	Joseph Russ	2,360.00	2,360.00		
April 2	488	876, 877, 878, 1133, 1134, 1425	Joseph Russ	1,000.00	1,000.00		
April 2	489	531	Louis Reed and A. C. Stephenson, assignees of A. C. Stephenson and F. L. Beel			40.00	40.00
April 2	490	1591	John Reynolds			40.00	
April 2	491	1469	The Navarro Mill Company, assignee of C. A. McFaul	40.00	40.00		
May 16	492	968	S. S. Fraser	40.00	40.00		
June 14	493	1633	William Campbell			40.00	40.00
June 27	494	411	John Forster, his heirs or assigns	1,544.61	1,544.61		
June 27	495	412	Francisco P. Forster, his heirs or assigns	82.00	82.00		
June 23	496	4 (Seminary)	Mrs. E. J. Atkinson (320 acres)			80.00	80.00
June 23	497	290	James Eva, assignee of Benjamin Cuzner				
June 23	498	359	M. L. E. Sheplar, assignee of James Hawks	160.00	160.00	82.52	82.52
June 23	499	1694, 1679	John Means			80.00	80.00
June 23	500	1657	Kate F. Overton			40.00	40.00
June 23	501	1598	Samuel J. Miller			49.02	49.02
June 23	502	1737	James T. Ford			40.00	40.00
June 23	503	1228	Francis Gibson				

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STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1887—Aug. 22	504	1581	George Bushby	160.00	160.00	40.00	40.00
Aug. 22	505	1408	William Webb, assignee of Lincoln Webb	200.00	200.00	---	---
Oct. 1	506	315, 349	J. C. Carwile	320.00	320.00	---	---
Nov. 14	507	124	G. G. Johnson, assignee of J. B. Swan	---	---	---	---
Oct. 10	508	849	Augustus Cleale, assignee of Henry Brown	---	---	40.00	40.00
Dec. 8	509	1183	Samuel H. Creps	---	---	86.25	86.25
Dec. 9	510	1024	John Thomas	---	---	78.35	78.35
Dec. 9	511	925	Frederick W. Behrens	49.62	49.62	---	---
Dec. 9	512	---	Not issued	---	---	---	---
Dec. 23	513	219, 633	James D. Farwell	---	---	279.59	279.59
Dec. 23	514	1416	Rufus H. Small	---	---	80.00	80.00
Jan. 24	515	1623	N. W. Fales	---	---	40.00	40.00
Jan. 28	516	645	Mrs. Mary Fairbanks, guardian of the persons and estate of Frank, William H., and Harriet Amelia Fairbanks, minors	80.00	80.00	---	---
Feb. 3	517	685	H. C. Wilson	---	---	320.00	320.00
Feb. 8	518	988	Joseph H. Glide	80.00	80.00	160.00	160.00
Feb. 8	519	1741, 1742	William M. Scott	80.00	80.00	---	---
Feb. 25	520	1706	W. S. M. Wright	160.00	160.00	---	---
Feb. 25	521	1843, 1362	Joseph Korbel	---	---	80.00	80.00
Mar. 7	522	1114	D. O. Daggett	129.68	129.68	---	---
Mar. 31	523	1759, 1792, 1793	Robert S. Hardin	---	---	160.00	160.00
May 1	524	1805	George D. Rowan	104.97	120.00	---	---
May 21	525	1756, 1757	Marcus D. Hyde, assignee of Samuel and John Kelly, Priestly Hall	---	---	40.00	40.00
May 21	526	1761	Joel P. Whitney, assignee of Francis L. Whitney	530.81	530.81	80.00	80.00
May 21	527	495	Albert Dibble	---	---	---	---
May 28	528	1115, 1116, 1118, 1120	Jackson Hart and W. P. Harrington, assignees of Jefferson Walker	32.75	40.00	508.00	508.00
July 21	529	430, 432, 497, 559, 621, 1148	William Hawes	---	---	40.00	40.00
Aug. 17	530	1780	John Boggs	40.00	40.00	---	---
Aug. 17	531	1781	Jesse D. Carr	---	---	---	---
Aug. 17	532	1747	W. W. Brown, assignee of Brown & Curtis	---	---	804.00	804.00
Sept. 12	533	478, 480, 481, 484, 611	Walter M. Jeffreys	129.19	129.19	40.00	40.00
Sept. 12	534	1673	C. A. Perkins (amendatory to 481)	---	---	---	---
Sept. 12	535	796, 1421	---	---	---	---	---

Oct. 2.	1441	W. A. Turner	40.00	40.00	40.00
1889—Feb. 20.	1624	George H. Singley, assignee of W. P. Lampkin	40.00	40.00	40.00
Feb. 20.	1422	Charles H. F. Braun	70.56	70.56	70.56
Feb. 20.	639	John C. White	170.53	170.53	170.53
May 28.	640	Henry Vengerholz and Hiram Gilmore	40.00	40.00	40.00
May 28.	641	Richard McInnespy	40.00	40.00	40.00
May 28.	642	Mary E. Cook	40.00	40.00	40.00
May 28.	643	L. H. Baker	160.00	160.00	160.00
May 28.	644	M. Mulqueeney, assignee of Thomas H. Dowling	40.00	40.00	40.00
May 28.	1330	E. F. Beale	160.00	160.00	160.00
May 28.	645	E. F. Beale	240.00	240.00	240.00
May 28.	646	Alexander Coyner	51.18	51.18	51.18
May 28.	547	Heman Tompkins	40.00	40.00	40.00
May 28.	648	Thomas S. Hardin	87.31	87.31	87.31
May 28.	649	Robert A. Blair	40.00	40.00	40.00
May 28.	650	Robert G. Gibson	80.17	80.17	80.17
May 28.	651	M. Dooling	80.00	80.00	80.00
May 28.	652	N. H. Fales	40.00	40.00	40.00
May 28.	653	George H. Singley	40.00	40.00	40.00
May 28.	554	George H. Singley	40.00	40.00	40.00
May 28.	555	John Reynolds	40.00	40.00	40.00
June 22.	556	John Reynolds	40.00	40.00	40.00
June 22.	557	H. Burgett	80.00	80.00	80.00
June 22.	558	John B. Ross	40.00	40.00	40.00
June 22.	559	A. T. Wilton	40.00	40.00	40.00
June 22.	560	Thomas Cockburn.	120.00	120.00	120.00
June 22.	561	Daniel Giovannini, assignee of L. D. Casey, the latter assignee of William Moyle	40.00	40.00	40.00
June 22.	562	John L. Bromley	105.56	105.56	105.56
June 22.	563	Frank Statzel	40.00	40.00	40.00
June 22.	564	T. C. Herbert, assignee of Ralph de Clairmont	160.00	160.00	160.00
June 22.	565	John Tuohy	320.00	320.00	320.00
June 22.	566	John Tuohy	624.38	624.38	624.38
June 22.	567	E. G. Judson	40.00	40.00	40.00
June 22.	568	M. McStay	38.32	38.32	38.32
June 22.	569	M. McStay	40.00	40.00	40.00
June 22.	570	J. D. Starr, assignee of C. H. Schultz	40.00	40.00	40.00
June 22.	571	C. P. Moore	40.00	40.00	40.00
June 22.	572	George E. White	40.00	40.00	40.00
June 22.	573	Berry Wright	34.14	34.14	34.14
July 24.	6691	Thomas Flint	80.00	80.00	80.00
July 24.	574	John G. Bush	80.00	80.00	80.00
July 24.	575	John G. Bush	40.00	40.00	40.00
July 24.	576	John G. Bush	40.00	40.00	40.00
July 24.	577	John G. Bush	40.00	40.00	40.00
July 24.	578	Louis Levinsky	40.00	40.00	40.00
July 24.	1257				

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1889—July 24—	580	1261	Louis Levinsky.	—	—	40.00	40.00
July 24—	581	1265	Louis Levinsky.	—	—	40.00	40.00
July 24—	582	1559	W. P. Ink.	40.00	40.00	—	—
July 24—	583	1561	W. P. Ink.	40.00	40.00	—	—
July 24—	584	1049	Jackson Brown.	—	—	120.49	120.49
July 24—	585	1555	Frederick Yordi.	—	—	—	—
Sept. 5—	586	1308	Matthew Lynch.	40.00	40.00	—	—
Sept. 5—	587	863	Allen Towle.	—	—	—	—
Sept. 5—	588	865	Allen Towle.	—	—	—	—
Sept. 5—	589	1235	Charles David.	—	—	—	—
Sept. 5—	590	747	Ruel Stickney.	40.00	40.00	—	—
Sept. 5—	591	747	Ruel Stickney.	40.00	40.00	—	—
Sept. 5—	592	747	Ruel Stickney.	40.00	40.00	—	—
Sept. 5—	593	1682	Charles C. Paulk.	40.00	40.00	—	—
Sept. 5—	594	1689	Berry Wright.	33.89	40.00	—	—
Sept. 5—	595	921	James L. Gould.	—	—	40.00	40.00
Sept. 5—	596	1680	Berry Wright.	33.19	40.00	—	—
Sept. 5—	597	1149	Augustus Moore.	—	—	37.00	40.00
Sept. 5—	598	1800	George Atkinson.	—	—	40.00	40.00
Sept. 5—	599	1443	Hiram M. Buck.	—	—	40.00	40.00
Sept. 17—	600	Seminary.	James H. Wilson and Warren Moore, assignees of Andrew Corbett (160 acres).	—	—	—	—
Oct. 9—	601	1790	B. Marks and M. Neroheld, assignees of C. H. English.	40.00	40.00	—	—
Oct. 9—	602	1680	James F. Burris.	40.00	40.00	—	—
Oct. 9—	603	1683	James F. Burris.	40.00	40.00	—	—
Oct. 9—	604	598	Robert Clark, assignee of Alfred Tucker.	—	—	40.00	40.00
Oct. 9—	605	1313	William Farrington, assignee of Peter Donnelly.	—	—	80.00	80.00
Oct. 9—	606	1386	William E. Kaiser, assignee of Isaiah Yount.	63.56	63.56	—	—
Oct. 9—	607	1748	John C. Russell, assignee of William A. Russell.	—	—	324.08	324.08
Oct. 9—	608	1618	Jesse D. Carr.	—	—	40.00	40.00
Oct. 9—	609	1650	N. Goldtree, assignee of Morris Goldtree, assignee of the estate of David Russell in insolvency.	40.00	40.00	—	—
Oct. 14—	610	603	J. N. Hubbard, assignee of Timothy Paige.	160.00	160.00	—	—
Oct. 14—	611	1036	Peter Barile, assignee of George Barile.	—	—	40.00	40.00
Oct. 14—	612	1678	William Dinning.	40.00	40.00	—	—

Oct. 14.	613	801	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	280.00	280.00
Oct. 14.	614	802	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00
Oct. 14.	615	803	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	280.00	280.00
Oct. 14.	616	804	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	120.00	120.00
Oct. 14.	617	806	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00
Oct. 14.	618	807	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	200.00	200.00
Oct. 14.	619	808	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co. (canceled)		
Oct. 14.	620	809	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	160.00	160.00
Oct. 14.	621	810	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00
Oct. 14.	622	811	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	280.00	280.00
Oct. 14.	623	812	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00
Oct. 14.	624	813	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	280.00	280.00
Oct. 14.	625	814	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	240.00	240.00
Oct. 14.	626	815	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00
Oct. 14.	627	816	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	160.00	160.00
Oct. 14.	628	820	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	240.00	240.00
Oct. 14.	629	821	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	200.00	200.00
Oct. 14.	630	851	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	200.00	200.00
Oct. 14.	631	852	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	120.00	120.00
Oct. 14.	632	853	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	40.00	40.00
Oct. 14.	633	854	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	120.00	120.00
Oct. 14.	634	855	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	40.00	40.00

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1889—Oct. 14.	635	869	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	80.00	80.00		
Oct. 14.	636	632	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	1,918.05	1,918.05		
Oct. 14.	637	1357	F. H. Bell, assignee of Hugh Roddin	160.00	160.00		
Oct. 14.	638	1636	John Johansen	40.00	40.00		
Oct. 31.	639		Sierra Lumber Co., amendatory of patent No. 619	320.00	320.00		
Oct. 31.	640	1704	George H. Crocker	40.00	40.00		
Dec. 20.	641	1698	J. H. Burchard	79.39	79.39		
Dec. 20.	642	1669	R. A. Loomis, assignee of N. S. Robinson, the latter assignee of S. A. Buckliffe	40.00	40.00		
Dec. 20.	643	1397	William Pinkerton, Jr., and Charles W. Jackson, assignees of Charles Ashton	40.00	40.00		
Dec. 20.	644	1423	William Pinkerton, Jr., and Charles W. Jackson, assignees of Charles Ashton	80.00	80.00		
Dec. 20.	645	1697	N. C. Mathers	80.00	80.00		
Dec. 20.	646	774	Isaac N. Chapman	40.00	40.00		
Dec. 20.	647	1576	John F. Todd	40.00	40.00		
Dec. 20.	648	976	Oscar R. Harmon	40.00	40.00		
Dec. 20.	649	1169	John Gleason			40.00	40.00
Dec. 20.	650	1806	Alexander Coyner			80.00	80.00
Dec. 20.	651	1568	Julius Weyand			40.00	40.00
Jan. 2.	652	17724	R. M. Poyson	40.00	40.00		
Jan. 2.	653	1723	R. M. Poyson	40.00	40.00		
Jan. 2.	654	1724	R. M. Poyson	40.00	40.00		
Jan. 2.	655	1233	R. M. Mulgoney	364.49	364.49		
Jan. 2.	656	330	W. G. Henneke, assignee of J. W. Gaither			38.28	40.00
Jan. 16.	657	691	Mary R. Hoag, nee Prussing, assignee of Henry J. Werner			40.75	40.75
Jan. 16.	658	1619	A. J. Thomas	88.79	88.79		
Jan. 16.	659	1632	A. J. Thomas	40.00	40.00		
Jan. 16.	660	1633	A. J. Thomas	40.00	40.00		
Jan. 16.	661	1730	A. J. Thomas	40.00	40.00		
Jan. 16.	662	1620	Thomas & Ristine	80.00	80.00		
Jan. 16.	663	1621	Thomas & Ristine	40.00	40.00		

Jan. 16.-	684	1675.	L. V. Cushman.	160.00	160.00	80.00	80.00
Jan. 16.-	685	1676.	L. V. Cushman.	160.00	160.00		
Jan. 16.-	686	1682.	John McCann.	40.00	40.00		
Mar. 12.	687	829.	W. G. Henneke, assignee of J. W. Gaither.	40.00	40.00		
Mar. 12.	688	884.	Allen Towle.				
Mar. 12.-	689	1778.	William A. Morris.	40.00	40.00		
Mar. 12.-	670	348.	Mary E. Peppard, assignee of John Mullin.	80.00	80.00		
Mar. 21.-	671	1748.	Andrew J. Vielle.			160.00	160.00
April 5.-	672	1268.	Frank W. Lynch, assignee of James Lynch.	135.73	135.73		
April 5.-	673	1684.	Frank W. Lynch, assignee of James K. Lynch.	40.00	40.00		
April 5.-	674	1739.	Frank W. Lynch, assignee of James K. Lynch.	40.00	40.00		
April 5.-	675	423.	James Lynch.	80.00	80.00		
April 5.-	676	1298.	James Lynch.	40.00	40.00		
April 5.-	677	1304.	James Lynch.	40.00	40.00		
April 5.-	678	1731.	James R. Hebbroon.	40.00	40.00		
April 5.-	679	1692.	James K. Lynch.	40.00	40.00		
April 5.-	680	1681.	James R. Hebbroon, assignee of W. L. Hebbroon.	40.00	40.00		
April 5.-	681	1404.	B. V. Sargent.	80.00	80.00		
April 5.-	682	1406.	B. V. Sargent.	260.89	260.89		
April 5.-	683	1411.	B. V. Sargent.	80.00	80.00		
April 5.-	684	1634.	B. V. Sargent.	80.00	80.00		
April 5.-	685	1635.	B. V. Sargent.	80.00	80.00		
April 5.-	686	584.	E. T. Donnelly, A. J. Donnelly, and J. F. Dunne, assignees of Robert Morrison.	80.00	80.00		
April 5.-	687	585.	E. T. Donnelly, A. J. Donnelly, and J. F. Dunne, assignees of Robert Morrison.	80.00	80.00		
April 5.-	688	786.	E. T. Donnelly, A. J. Donnelly, and J. F. Dunne, assignees of Robert Morrison.	80.00	80.00		
April 5.-	689	1674.	James R. Hebbroon.	80.00	80.00		
April 5.-	690	1329.	James F. Dunne, assignee of E. T. Donnelly.	40.00	40.00		
April 5.-	691	1410.	James F. Dunne, assignee of E. T. Donnelly.	160.00	160.00		
April 28.	692	1751.	William Dunphy.	160.00	160.00		
April 28.	693	1752.	William Dunphy.	102.40	102.40		
April 28.	694	1796.	George E. Otis.	40.00	40.00		
May 2.-	695	352.	W. G. Henneke, assignee of J. W. Gaither.	40.00	40.00		
May 2.-	696	599.	R. B. Smith.	120.37	120.37		
May 2.-	697	1067.	Sierra Lumber Co., assignee of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	40.00	40.00		
May 2.-	698	1058.	Sierra Lumber Co., assignee of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	138.60	138.60		
May 2.-	699	1059.	Sierra Lumber Co., assignee of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00		
May 2.-	700	1060.	Sierra Lumber Co., assignee of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00		
May 2.-	700	1060.	Sierra Lumber Co., assignee of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	40.00	40.00		

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1890—May 2..	701	1061	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	80.00	80.00	-----	-----
May 2..	702	1062	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	120.00	120.00	-----	-----
May 2..	703	1063	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	160.00	160.00	-----	-----
May 2..	704	886	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	202.75	202.75	-----	-----
May 2..	705	887	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	160.00	160.00	-----	-----
May 2..	706	888	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	240.00	240.00	-----	-----
May 2..	707	889	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	708	900	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	314.03	314.03	-----	-----
May 2..	709	901	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	288.61	288.61	-----	-----
May 2..	710	910	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	711	911	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	200.00	200.00	-----	-----
May 2..	712	912	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	713	913	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	714	914	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	715	915	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	321.11	321.11	-----	-----
May 2..	716	916	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----
May 2..	717	917	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.....	320.00	320.00	-----	-----

May 2..	718	918	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	240.00	240.00	---	---
May 2..	719	919	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	320.00	320.00	---	---
May 2..	720	920	Sierra Lumber Co., assignees of C. T. Hopkins, trustee in bankruptcy of Sierra Flume and Lumber Co.	200.00	200.00	---	---
July 17..	721	1817	Thomas Hopper	40.82	40.82	---	---
July 17..	722	1821	E. Lynn	40.00	40.00	---	---
July 17..	723	1829	Alfred A. Wheeler	140.66	140.66	---	---
July 17..	724	1815	J. K. Fraser	120.00	120.00	---	---
July 17..	725	1826	Charles Ashton	40.00	40.00	---	---
July 17..	726	1828	Charles Ashton	40.00	40.00	---	---
Aug. 11..	727	1820	Newton C. Mathers	40.00	40.00	---	---
Oct. 8..	728	1294	Johann Tribken	40.00	40.00	---	---
Oct. 8..	729	1554	Henry B. Old	30.12	40.00	80.00	80.00
Oct. 8..	730	496	D. P. Fleming, assignee of Jefferson Walker	---	---	80.00	80.00
Oct. 8..	731	431	D. P. Fleming, assignee of Jefferson Walker	---	---	40.00	40.00
Oct. 8..	732	628	Laban Secaree	---	---	160.00	160.00
Oct. 8..	733	1288	James Eurlight	---	---	40.00	40.00
Oct. 8..	734	987	Robert Sudden, assignee of John Lloyd & Niles Iverson, assignees in bankruptcy of Amasa Saunders	80.00	80.00	---	---
Oct. 8..	735	928	Daniel Whitmore, assignee of Geo. E. and Sarah Corbett, the latter assignees of Humphrey and K. A. Jones	---	---	40.00	40.00
Oct. 8..	736	929	Daniel Whitmore, assignee of Geo. E. and Sarah Corbett, the latter assignees of Humphrey and K. A. Jones	---	---	40.14	40.14
Oct. 8..	737	1806, 1810	John H. and Duncan McNee, assignees of Thos. W. Moore	480.41	480.41	---	---
Oct. 8..	738	1290	Jennie E. Gray et al., assignees of A. Gray	40.00	40.00	---	---
Dec. 1..	739	629	Wm. S. Wilcox, assignee of J. D. Potts	---	---	41.99	41.99
Dec. 8..	740	477	Chas. D. Eilers	160.00	160.00	---	---
Dec. 22..	741	1432	Samuel Ward, Loomis Ward, Jr., and Edith Ward Stanton, children and sole heirs of Loomis Ward	---	---	24.14	40.00
Dec. 22..	742	1229	John H. Brockman	---	---	80.00	80.00
Dec. 22..	743	435	John H. Brockman and F. Hoke, assignees of Robert K. Burrows	---	---	51.51	51.51
Dec. 22..	744	1172	Joseph Farman (canceled)	---	---	---	---
Dec. 22..	745	1171	Joseph Farman (canceled)	40.00	40.00	---	---
Dec. 26..	746	1763	Washington Rhorback	---	---	40.00	40.00
Dec. 26..	747	1764	Washington Rhorback	---	---	80.00	80.00
Dec. 26..	748	1765	Washington Rhorback	---	---	---	---
Dec. 26..	749	665	Henry Vennigerholz	---	---	40.00	40.00
1891-Jan. 9..	750	708	Henry Vennigerholz	---	---	80.00	80.00
Jan. 13..	751	1171	Joseph Farman, amendatory of patent No. 744	---	---	---	---

1891

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	No. of Patent.	Number of Location.	NAME OF PATENTEE.	Minimum.		Double Minimum.	
				Area Patented.	Area Accepted by State.	Area Patented.	Area Accepted by State.
1891—Jan. 13.	752	1172	Joseph Farman, amendatory of patent No. 745.	160.00	160.00	80.00	80.00
Jan. 15.	753	Seminary	Herbert Kraft, assignee of S. A. Gyle (80 acres).	---	---	---	---
Jan. 26.	754	1802	John C. Schlarbaum.	---	---	---	---
Feb. 25.	755	545.	C. M. Howard, assignee of John Woodson	40.00	40.00	---	---
Mar. 19.	756	1766	Geo. A. Lyon.	40.00	40.00	---	---
Mar. 28.	757	983	C. S. Merrill, Jr., assignee of Geo. W. Cozzens.	80.00	80.00	---	---
Mar. 28.	758	1789	Geo. Vaughan	---	---	---	---
Mar. 28.	759	1772	T. S. Hawkins, assignee of A. S. Murphy, the latter assignee of T. H. French	---	---	80.00	80.00
Mar. 28.	760	1320	James F. Dunne, assignee of E. T. Donnelly.	---	---	126.40	126.40
Mar. 28.	761	1376	James F. Dunne, assignee of E. T. Donnelly.	---	---	160.00	160.00
Mar. 28.	762	644.	Andrew Stenzel, assignee of R. G. Rowley.	---	---	74.64	74.64
Mar. 28.	763	1321	James F. Dunne, assignee of E. T. Donnelly.	---	---	40.00	40.00
April 7.	764	1818	Jeremiah C. Haunon.	---	---	138.56	160.00
April 7.	765	1812	W. F. Edgar.	---	---	160.00	160.00
April 7.	766	1811	Robert Boswell.	---	---	160.00	160.00
April 7.	767	1773	T. H. French	---	---	40.00	40.00
April 7.	768	1773	T. H. French	---	---	40.00	40.00
April 7.	769	1773	T. H. French	---	---	40.00	40.00
April 27.	770	1569	Annie W. and E. H. Jack, assignees of Wm. S. Mott.	---	---	40.00	40.00
May 28.	771	1797	T. H. French, assignee of Edward F. Osborne, the latter assignee of T. H. French.	---	---	40.00	40.00
May 28.	772	191.	William Sorvin, assignee of William Raishleigh.	320.00	320.00	40.00	40.00
May 28.	773	1184.	Walter M. Jeffreys.	40.00	40.00	---	---
			Totals	81,104.08	81,619.42	48,520.87	48,885.03

Total area of minimum land patented.....	81,104.08
Total area of double minimum land patented.....	48,520.87
Total area patented to June 30, 1891.....	129,624.95
Total area of minimum land accepted by State.....	81,619.42
Total area of double minimum land accepted by State.....	48,885.03
Total area accepted by State.....	130,504.45

Respectfully submitted.

J. H. C. BONTEÉ,
Land Agent.

GENERAL APPENDIX.

INVENTORY OF UNIVERSITY PROPERTY IN THE DEPARTMENT OF MILITARY SCIENCE AND TACTICS,

JUNE 1, 1891.

BOOKS.

- | | |
|---|--|
| Webster's Unabridged Dictionary. | Lessons of War, as Taught by the Old Masters. |
| Owen's Modern Artillery. | Blunt's Manual of Small Arms Practice (2 copies). |
| Decisive Battles of the World. | Elementary Principles Connected with the Art of War. |
| Studies in Troop Leading (Cavalry). | The Great Captains, Hannibal; by Dodge. |
| Soldiers' Pocketbook for Field Service. | Manual of Guard Duty; by Kennon (3 copies). |
| Pieces of Modern Tactics. | Military Hygiene. |
| Campaigns of the Army of the Potomac. | Military Law. |
| History of the Civil War; by Count de Paris. | Elements of Modern Tactics. |
| Personal Memoirs of U. S. Grant. | Foil Tactics. |
| Decisive Battles of the War. | Great Captains, Alexander; by Dodge. |
| Memoirs of General W. T. Sherman. | Submarine Mines, etc. |
| Battles of the Republic. | Gunnery; by MacKinley. |
| Text-book of Military Topography. | Field Works; by Brackenburgh. |
| Influence of Firearms upon Tactics. | Minor Tactics; by Clery. |
| Wilhelm's Military Dictionary (2 copies). | Letters on Artillery; by Hohenlohe. |
| Jomini's Art of War. | Letters on Infantry; by Hohenlohe. |
| Victories and Defeats. | Tactics and Organization; by Mande. |
| The American Kriegspiel. | Report of Inspector-General, 1890 (2 copies). |
| Art of War; by Marcus. | Report of General Schofield, 1890. |
| Operations of War. | Report of Chief of Ordnance, 1890. |
| Strategos and Maps. | |
| Wheeler's Art and Science of War (45 copies). | |
| Wheeler's Elements of Field Fortifications (36 copies). | |

OTHER PROPERTY.

- | | |
|-------------------------------------|--|
| 19 officers' swords and belts. | 2 small cleaning brushes. |
| 7 officers' swords and belts (new). | 1 can oil. |
| 2 bunting flags, large. | 1 oil can. |
| 4 blue silk markers' flags. | 1 set mourning drapery. |
| 5 drums (worthless). | 1 package popn. targets. |
| 12 drumsticks. | 1 metal file. |
| 9 bugles (worthless). | 2 Ballard rifles (22 cal.). |
| 1 silk battalion flag (new). | 2 metal balls (for snap shooting). |
| 1 silk battalion flag (old). | 1 brass cleaning-rod (22 cal.). |
| 1 set stencil plates (Ex. missing). | 1 cut (rifle name U. C.) for Blue and Gold. |
| 2 sets numbers. | 1 box stencil color and brush. |
| 85 white canvas bags. | 1 globe. |
| 2 belts for drums. | 1 letter press (complete). |
| 2 flag belts. | 1 bookcase. |
| 2 pinions for belts. | 30 chairs. |
| 1 flag chest. | 1 iron letter box. |
| 1 gun rack. | 2 tape measures (100 feet). |
| 1 desk. | 2 glass inkstands. |
| 1 Ex. en. receipt book. | 1 automatic map box with ten maps. |
| 1 piece (worthless). | 1 map of the United States. |
| 1 coal hod. | 1 map of Europe. |
| 1 stove and fixtures. | 1 hatchet. |
| 1 broom. | 2 wall files. |
| 1 sweeping brush. | 2 table files. |
| 1 dustpan. | 1 rubber stamp (Mil. Dept. U. C.) |
| 1 feather duster. | 2 letter books for letter press. |
| 1 paint brush. | 2 signal flags, 4-ft. (white, with red centers). |
| 1 screwdriver. | 2 signal flags, 4-ft. (red, with white centers). |
| 1 hammer. | 2 drums. |
| 1 wad cutter. | 2 pairs drumsticks. |
| 2 round files. | 2 drum slings. |

2 tables.	3 telegraph keys.
4 signal staffs (10 feet).	1 telegraph register.
4 signal staffs (6 feet).	1 metronome.
9 brush brooms.	Number of band selections.
1 scrap basket.	$\frac{1}{2}$ dozen clarionet reeds.
4 signal flags, 2-ft. (white, with red centers.)	1 piccolo music rack.
6 bugles (new; complete).	2 clarionet racks.
2 storm flags.	1 inkwell.
1 post flag.	2 boxes bands.
12 cans blacking for belts.	4 memorandum books.
1 gallon cylinder oil.	2 blotters.
6 bugle cords.	1 bottle red ink.
1 Eb piccolo.	1 pencil rubber.
1 Eb clarionet.	3 dozen pen points.
1 Bb clarionet.	1 box fasteners.
3 Bb cornets.	1 note pad.
3 Eb altos.	3 notebooks.
2 Bb tenors.	1 ink pad.
1 Bb baritone.	1 inkstand.
1 Bb bass.	2 steel erasers.
1 Eb bass.	2 bottles ink.
1 snare drum.	1 penknife.
1 bass drum.	1 ruling pen.
1 pair cymbals.	3 board clips.
16 music stands.	Crepe for flag.
18 music books.	

All the University property received by me when I released Lieut. G. F. E. Harrison, September 23, 1890, and all purchased or received since, is accounted for except two field glasses, which were stolen from the armory in April, 1891, and one copy of the "Art of War," which was paid for and the money turned in.

Respectfully submitted.

B. H. RANDOLPH,

First Lieut. of Third Art., Professor of Military Science and Tactics.

DONATIONS TO THE LIBRARY, 1890-91.

	Books.	Pam- phlets.
Adelbert College.....		1
Adrian College.....		2
Agricultural and Mechanical College of Alabama.....		7
Agricultural College of New Mexico.....		3
Alabama Geological Survey.....	1	
Alabama Industrial and Scientific Society.....		1
Albion College.....		1
Alcorn Agricultural and Mechanical College.....		2
American Antiquarian Society.....		1
American Bankers' Association.....		3
American Congregational Association.....		1
American Geographical Society.....	3	5
American Institute of Mining Engineers.....	1	
American Philosophical Society.....		5
American Society of Microscopists.....		1
American Standard.....		1
Amherst College.....		3
Andover Theological Seminary.....		1
Anonymous.....	8	
Apprentices' Library, New York.....		1
Apprentices' Library Company of Philadelphia.....		2
Arkansas Geological Survey.....	1	
Arkansas Industrial University.....		1
Armes, William D., Class of 1882, U. C.....	3	1
Astronomical Observatory of Harvard College.....		1
Astronomical Society of the Pacific.....		8
Athens Library.....		1
Auburn Theological Seminary.....		2
Ayers, Howard, Milwaukee.....		1
Babcock-Wilcox Co., New York.....	1	
Bacon, Prof. T. R.....	6	
Bailey, Charles A., San Francisco.....	1 map	
Baker & Co., Dorchester, Mass.....	1	
Baltimore College of Dental Surgery.....		2
Bangor Public Library.....		1
Barnard, E. E., Lick Observatory.....		1
Bartlett, Columbus.....	5	
Batavia, Java, Observatory.....	1	
Bates College.....		1
Beard, D. L., Class of 1891, U. C.....	2	
Beer, William, Topeka.....		3
Bellevue Academy.....		1
Belmont School.....		1
Beloit College.....		1
Berlin Akademie der Wissenschaften.....	1	
Bethel College.....		3
Bishop, Mrs. D. L., Berkeley.....	2	
Bishop Scott Academy.....		1
Bonn Universität.....		138
Bonté, Dr. J. H. C. (besides ten duplicates).....		22
Boone's University School.....		1
Boston College.....		1
Boston Public Library.....		5
Boston Record Commission.....	2	
Boston University.....	3	2
Bouse, John.....	1 class foot-ball trophy	
Bowdoin College.....		3
Boys and Girls' Aid Society, San Francisco.....		1
Braverman, Al., Class of 1886, U. C.....		1
Breslau Universität.....	3	60
Bridgeport (Conn.) Public Library.....		1

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
British Association Advancement of Science.....	2	
Bronson Library Fund		2
Brooklyn Institute	1	
Brooklyn Library		2
Brown, John C., Haddington, England		4
Brown University		1
Brownell, T. Frank, New York		1
Brussels Université		1
Bryn Mawr College		2
Buchtel College		1
Bucknell University		2
Buenos Aires Universidad		1
Buffalo Historical Society		2
Buffalo Library		2
Bunnell, Prof. George W.	2	
Burnham, S. W., Lick Observatory		4
California Academy of Sciences	2	
California Board of State Harbor Commissioners		1
California Board of State Viticultural Commissioners	1	
California College		1
California Secretary of State	2	
California State Association of Y. M. C. A.		1
California State Board of Forestry		1
California State Library		1
California State Mineralogist	1	
California State Normal School, San José		1
California State Printer		2
California State Superintendent of Public Instruction	3	
Cambridge Philosophical Society	1	
Canada Central Experiment Farm		3
Canada Geological and Natural History Survey	1	4
Canada Minister of Finance	1	
Canadian Institute		7
Canebrake Agricultural Experiment Station		5
Canisius College		1
Capital University		1
Carlton College		1
Carthage College		1
Case School of Applied Science		1
Cathedral School of St. Paul		1
Catholic University of America		3
Central University of Kentucky		1
Chicago Public Library		1
Chicago University		1
Christiania Bibliothek de l'Université		5
City Library Association of Springfield		1
Civil Service Chronicle		1
Clark University		2
Clay, Cassius M., Whitehall, Ky.		2
Cobden Club, London		1
Coimbra Universidad		2
Colby University		2
Colgate University		1
College of Montana		3
College of New Jersey		1
College of Pharmacy of New York		1
College of the City of New York		1
Colorado College and Cutter Academy		1
Columbia College	1	1
Columbian University		1
Connecticut Agricultural Experiment Station		7
Cook, Prof. Albert S., New Haven	1	2
Cooke, H. H., Chicago	3	
Cooper Union for Advancement of Science and Art		1
Cornell College		1
Cornell University	1	6
Cumberland University		2
Cummings, Miss S. M. N.	1	
Cust, Robert N., London	2	
Cutter, C. A., Boston		1

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Dante Society, Cambridge, Mass. ....	.....	1
Dartmouth College .....	.....	2
Davidson, Prof. George	1	.....
Davidson College .....	.....	1
Davie, John L., Oakland .....	.....	1
Davis, A. McF., Cambridge, Mass. ....	.....	2
Davis, Hon. Horace (besides 26 duplicates)	4 maps	174
Deamer, W. W., Class of 1883, U. C. ....	.....	1
Delaware College .....	.....	1
Denver Public Library .....	.....	3
De Pauw University .....	.....	2
Detroit Public Library	1	.....
Dille, Rev. E. R., Oakland .....	.....	3
Dorpat Universität	8	157
Drew, Elmer R., Class of 1888, U. C.	2 photographs	.....
Drury College .....	.....	1
Edmands, John, Philadelphia .....	.....	1
Emory and Henry College .....	.....	1
Erlangen Universität .....	.....	53
Erskine College .....	.....	1
Essex Institute, Salem, Mass. ....	.....	6
Evangelical Educational Society, Philadelphia .....	.....	1
Experiment Station of Florida .....	.....	2
Findlay College .....	.....	1
Firenze Reale Accademia .....	.....	1
Fisk University .....	.....	2
France Ministère de l'Agriculture .....	.....	5
Franklin and Marshall College .....	.....	1
Franklin College .....	.....	1
Fraser, W. H., Class of 1890, U. C.	1	.....
Fraser, Persifor, Philadelphia .....	.....	2
Friend's Book Store, Philadelphia .....	.....	2
Furman University .....	.....	1
Gambier College .....	.....	1
Gayley, Prof. Charles M.	1	.....
Gazette Publishing Co., Golden Gate .....	.....	6
Geddes, Prof. Patrick, Edinburgh .....	.....	1
General Theological Seminary .....	.....	1
Geneva College .....	.....	1
Geneva Université	3	14
Georgetown University .....	.....	1
Georgia Experiment Station .....	.....	4
Georgia Commissioner of Agriculture .....	.....	6
Giessen Universität .....	.....	23
Gilman, Arthur, Cambridge, Mass. ....	.....	1
Goppelsroeder, Dr. Friedrich	1	.....
Göttingen Universität	6	90
Gratz Universität .....	.....	4
Great Britain Secretary of State .....	.....	5
Greene, Prof. Edward L. ....	.....	5
Greifswald Universität .....	.....	7
Griffis, Rev. William E., Boston	1	.....
Groningen Universiteit .....	.....	1
Grunsky, C. E.	1	.....
Halle Universität	9	138
Hamilton College .....	.....	1
Hampden Sidney College .....	.....	1
Hampton Normal and Agricultural Institute .....	.....	2
Hannemann Hospital College .....	.....	1
Hanover College .....	.....	1
Harris, Joseph, Moreton Farm, N. Y. ....	.....	1
Hartford Seminary .....	.....	1
Hartsville College .....	.....	1
Harvard University	1	13
Hatch Experiment Station .....	.....	5
Haverford College .....	.....	6

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Healdsburg College	1	1
Hebrew Technical Institute	1	1
Heidelberg Universität	3	43
Hemphill, Henry, San Diego	1	1
Henderson, W. W.	2	2
Heydenfeldt, S., Jr., San Francisco	1	1
Hilgard, Prof. Eugene W.	2	1
Hill, Charles B., Lick Observatory	1	1
Hillsdale College	1	1
Hiram College	1	1
Historical and Philosophical Society of Ohio	1	1
Historical Society of Southern California	1	1
Hittell, John S.	2	1
Hobart College	1	1
Holden, Prof. Edward S. (case photographs, besides 29 duplicates)	4	24
Holden, Prof. Warren, Philadelphia	1	1
Hope College	1	2
Howard, George E., Lincoln, Neb.	4	4
Howard Memorial Library	1	1
Howard University	1	1
Howison, Prof. George H.	2	1
Illinois Society of Engineers and Surveyors	1	1
India, Great Trigonometrical Survey	3	1
Institution of Civil Engineers, London	4	1
International American Conference	1	1
Inyo Academy	1	1
Iowa Historical Society	1	4
Iowa State University	1	1
Iowa Wesleyan University	1	1
Irving Institute	1	1
Italy, Ministero di Agricolturo, etc.	6	6
Italy, R. Comitato Geologico	1	1
Jackson, Prof. A. W.	6	3
Japan Imperial University	2	2
Japan Seismological Society	20	55
Jena Universität	11	11
Johns Hopkins University	1	1
Jones, John P., M.C.	1	1
Kansas Academy of Science	1	7
Kansas State Agricultural College	1	1
Kansas State Historical Society	1	1
Keeler, E. W., San Francisco	1	1
Keeler, James E.	5	13
Kellogg, Prof. Martin	6	6
Kentucky Agricultural Experiment Station	1	1
Kirchhoff, Theodore, San Francisco	1	1
Kirk, T., New Zealand	1	1
Knox College	1	1
Konigsberg Universität	56	56
Lake Forest University	1	1
Lane Theological Seminary	1	1
Larremore, Wilbur	1	1
Lawes, Sir J. Bennet, Rothamsted, England	9	1
Lawrence Free Public Library	1	8
Lawson, Prof. A. C.	1	1
Layman, Mrs. C. B.	36	1
Layman, Joseph D., Class of 1888, U. C.	1	4
Leander McCormick Observatory	1	1
Le Conte, Dr. John	1	5
Le Conte, Dr. Joseph	2	2
Lehigh University	2	5
Leiden Universiteit	7	7
Leipzig Universität	4	4
Leland Stanford, Jr., University	2	2
Lemberg Universitetu	2	2
Lengfeld, A. L., M.D., San Francisco	2	2

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Lezinsky, David L., Class of 1884.....	1 class pin	.....
Library Bureau, Boston.....	1	.....
Lick Observatory (besides 11 duplicates).....		79
Lieber Library (gift of Michael Reese).....	1	.....
Lincoln University.....		1
London Anti-Vivisection Society.....		10
Long Island Historical Society.....	1	.....
Loomis, Henry B., Seattle.....		1
Los Angeles Public Library.....		3
Los Angeles Superintendent of Schools.....		1
Los Angeles University.....		1
Louderbach, A. W., & Co.....		1
Loughridge, Dr. R. H.....	7	14
Louvain Université.....		17
Luebbert, Wm., Class of 1892, U. C.....	1 class pin	.....
Lukens, G. R., Class of 1889, U. C.....		1
Lunds Universitet.....		2
Luther College.....		1
Lyon Université.....	4	15
Macalester College.....		3
McKenna, Hon. Joseph.....	14	1
McLean, Rev. J. K., Oakland.....		5
Madison University.....		2
Madrid Universidad.....		2
Manchester Literary and Philosophical Society.....	1	.....
Manhattan College.....		1
Marburg Universität.....	8	145
Maryland Agricultural College.....		5
Mason, Dr. B. F., San Leandro.....	1	.....
Massachusetts Agricultural Society.....		10
Massachusetts Board of Education.....	1	.....
Massachusetts Bureau of Statistics of Labor.....	2	.....
Massachusetts Institute of Technology.....	2	23
Massachusetts State Bureau of Lunacy.....	1	.....
Melbourne Observatory.....		3
Melbourne University.....	2	.....
Miami University.....		1
Michigan Mining School.....		2
Michigan State Agricultural College.....		12
Michigan State Board of Agriculture.....	17	2
Middlebury College.....		1
Milan Regio Instituto Technico Superiore.....	1	1
Miller, Adolph C., Class of 1887, U. C.....	1	1
Miller, C. G., Chicago.....	1	.....
Mills College.....		2
Mining Journal, London.....	1	.....
Minneapolis Public Library.....		6
Minnesota State Historical Society.....	1	1
Miss Lake's School, San Francisco.....		1
Missouri Agricultural College.....		2
Missouri Botanical Garden.....	1	.....
Missouri State University.....		1
Montgomery, Z., Washington, D. C.....		1
Montpellier Université.....		2
Morrill, Hon. I. S.....		1
Moses, Prof. Bernard.....	14	.....
Mount Saint Mary's College.....		1
Mount Union College.....		1
Muhlenberg College.....		1
Museum of Fine Arts, Boston.....		2
National Association of Wool Manufacturers.....		2
National Civil Service Reform League.....		1
National Executive Silver Committee.....		16
Nebraska State Historical Society.....		1
Neill, Edward D., St. Paul.....		1
Nevada State Weather Service.....		2
Nevada Surveyor-General.....		1
Newark Free Public Library.....		1

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Newark Technical School.....		1
Newberry Library.....		1
New England Historic Genealogical Society.....		1
New Hampshire Agricultural College.....	1	2
New Haven Free Public Library.....		2
New Jersey Geological Survey.....	2	
New Jersey State Agricultural Experiment Station.....		9
New York Academy of Sciences.....		7
New York Board of Health.....	1	12
New York Mercantile Library Association.....		1
New York Meteorological Observatory.....		11
New York State Library.....	4	1
North Carolina Agricultural Experiment Station.....	1	2
North Carolina College.....		1
Northwestern College.....		1
Northwestern University, Evanston, Ill.		2
Oakland "Evening Tribune".....	1	
Oakland Health Department.....		9
Oakland Public Library.....		4
Oberlin College.....		1
"Occident," Berkeley.....		3
Occidental University.....		1
Ogden College.....		1
Ohio Agricultural Experiment Station.....		9
Ohio Meteorological Bureau.....		5
Ohio Military Academy.....		1
Ohio State University.....		1
Ohio University.....		2
Old Residents' Historical Association, Lowell, Mass.		1
Olivet College.....		1
O'Neill, Edmond, Class of 1879, U. C.		3
Ontario Fruit Growers' Association.....	1	
Orcutt, C. R., San Diego.....	1	2
Oregon Agricultural Experiment Station.....		4
Orton, Gen. R. H.....	2	
Ottawa University.....		1
Otterbein University.....		1
Pacific Coast Committee for Theosophic Work.....	4	
Pacific University, Oregon.....		1
Paris Université.....		3
Patton, Mrs. Ellen, Kansas.....	1	
Payne, Dr. F. H.....		1
Peabody Institute.....		1
Penn College.....		1
Pennsylvania College.....		1
Pennsylvania Historical Society.....	1	
Pennsylvania State College.....	1	5
Perkins, B. F., San Francisco.....		1
Perkins, W. Dana, Sacramento.....	1	
Perry, Mrs. B. F., Greenville, S. C.	1	
Philadelphia Bureau of Water.....	1	
Philadelphia Library Company.....		3
Phillips, James M., Estate of.....	76	
Phillips Academy, Andover, Mass.....		1
Phillips Exeter Academy.....		1
Pisa Università.....		1
Pitman and Howard, Cincinnati.....	1	
Polytechnic Institute of Brooklyn.....		2
Pomona College.....		1
Portland, Maine, Public Library.....	2	1
Post Graduate and Wooster Quarterly.....		2
Prag Universität.....		3
Pratapa Chandra Ray, Calcutta.....		9
Pratt Institute.....		2
Prince Society, Boston.....		2
Protestant Episcopal Church, New York Diocese.....	1	
Providence, R. I., City Engineer.....		1
Providence, R. I., Public Library.....		2

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Public Library of Brookline.....		1
Public Library of Cincinnati.....		6
Purdue University Agricultural Experiment Station.....		2
Quebec Université Laval.....		1
Racine College.....		1
Randolph-Macon College.....		1
Redwood Library and Athenæum.....		1
Reeve, Mrs. C. G. J., London.....	1	
Rhode Island Historical Society.....		2
Rhode Island School Commissioner.....	1	
Rhode Island State Agricultural School.....		5
Richardson, Prof. George M.....	6	
Ripley, Chauncy B.....		1
Ripon College.....		1
Rising, Prof. W. B.....		1
Ritter, W. E., Class of 1888, U. C.....		1
Rochester Academy of Science.....		1
Roger Williams University.....		1
Rome Reale Accademia dei Lincei.....		22
Rome Regia Università.....		1
Romero, Don Matias, Mexico City.....		1
Rose Polytechnic Institute.....		1
Rosenthal, A. G., U. C.....	2	
Rowell, Joseph C.....		1
Royal Institution of Great Britain.....		1
Royal Society of Canada.....		1
Royal Society of Edinburgh.....	2	
Royal Society of London.....	3	5
Rust University.....		1
Rutgers College.....		1
St. Andrews University.....	1	
St. Benedict's College.....		1
St. Charles College.....		1
St. Francis Xavier College.....		1
St. Ignatius College, California.....		1
St. Ignatius College, Chicago.....		1
St. Louis Mercantile Library Association.....		1
St. Louis Merchants' Exchange.....		1
St. Louis Public Library.....		11
St. Louis University.....		1
St. Mary's College, California.....		1
St. Mary's College, Kansas.....		2
St. Mary's College, Kentucky.....		1
St. Matthew's Hall.....		1
St. Meinrad's Classical College.....		1
St. Petersburg Academy of Natural Sciences.....		35
St. Stephen's College.....		1
St. Vincent College, Pennsylvania.....		1
St. Vincent College, Missouri.....		1
St. Xavier College, Cincinnati.....		1
Salem Public Library.....	1	4
Salt Lake City "Herald".....		1
San Francisco "Alta California".....	1	
San Francisco Board of Supervisors.....	1	
San Francisco "Examiner".....	2	
San Francisco Free Public Library.....		1
San Francisco Mercantile Library Association.....		1
San Francisco Mechanics' Institute.....	1	
San Francisco Odd Fellows' Library Association.....		2
San Francisco Port Society.....		2
Santa Barbara Society of Natural History.....		2
Santa Clara College.....		1
"Saturday Globe," New York.....	5	
School of Expression.....		1
Science Observer.....		3
Senger, Dr. J. H., Class of 1882, U. C.....		20
Shattuck School.....		1

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
Shedd, J. Herbert, Providence, R. I.		1
Shinn, Miss M. W., Class of 1890, U. C.	22	822
Siena Universita		1
Simpson College		1
Smithsonian Institution	9	9
Snow, R. W., Oakland		1
Sommer, Adolph		2
South Carolina Experiment Station		1
South Dakota Agricultural College		2
Southern Pacific Co.		5
Southern University		1
Spring Hill College		1
Stanford, Hon. Leland		2
State Agricultural and Mechanical College of Alabama		1
State Agricultural College, Colorado		6
State School of Mines, Colorado		1
Stein, Leo D., U. C.	9	
Storr's School Agricultural Experiment Station		8
Strasburg Universität	3	25
Stratton, Dr. C. C., Salem, Or.		1
Stringham, Prof. Irving	5	4
Sutro Library, San Francisco	1	
Swarthmore College		1
Swift, Morrison I., Ashtabula, Ohio		2
Syracuse University		1
Tabor College		1
Technical School of Cincinnati		1
Technical Society of the Pacific Coast		3
Tennessee State Board of Health		8
Texas Agricultural Experiment Station		3
Texas Geological Survey	1	
Theological Seminary, Andover, Mass.		1
Theological Seminary, Columbia, S. C.		1
Thiel College		1
Three Rivers Public Library		1
Toland, Mary B. M.	1	
Torino Osservatorio		1
Torino Universita		1
Toulouse Université		2
Trinity College		2
Tuft's College		1
Tulane University of Louisiana		1
Turner, Arthur C., Class of 1893, U. C.	1	
Turner, H. W., Washington		2
Union Theological Seminary		1
Union University		1
United States, various departments	158	237
University College, Toronto		1
University of Alabama		1
University of California	7	
University of California Athletic Association		3 medals
University of California, Class of 1890		1 photograph
University of California, Class of 1891	2	
University of California, Class of 1892	2	
University of California, Class of 1894		1 class pin
University of California, President's office (besides 4 duplicates)		12
University of California, Recorder's office	3	15
University of California, Students' Coöperative Society	3	
University of Cincinnati		1
University of Colorado		1
University of Deseret		3
University of Edinburgh	2	
University of Georgia		1
University of Illinois	1	9
University of Kansas		3
University of Michigan		3
University of Minnesota		2
University of Mississippi		1

DONATIONS TO THE LIBRARY—Continued.

	Books.	Pam- phlets.
University of Nashville		1
University of Nebraska		6
University of North Carolina		1
University of North Dakota		1
University of Oregon		2
University of Pennsylvania		2
University of Rochester		1
University of Texas		4
University of the City of New York		1
University of the South		1
University of the State of New York		13
University of Sydney	1	
University of Toronto		1
University of Vermont		2
University of Virginia		1
University of Wisconsin		6
University of Wooster		1
Upsala Universitet		31
Ursinus College		1
Utah Agricultural College		4
Vanderbilt University		1
Vassar College	1	1
Vienna Akademie der Wissenschaften	1	
Vienna Universität		30
Waite, Henry E., West Newton, Mass.		1
Washburn College		1
Washburn Observatory		2
Washington and Jefferson College		2
Washington and Lee University		1
Washington University		1
Waterhouse, S., St. Louis		1
Wellesley College	1	3
Welsbach Incandescent Gaslight Co.		1
Wesleyan University		3
West Virginia Agricultural Experiment Station		3
West Virginia College		3
Western College		1
Western Theological Seminary		1
Western University of Pennsylvania		1
Westminster College		1
Wheaton College		1
Wheeler, H. A., St. Louis		1
Wheeler, Roscoe, Class of 1891, U. C.	1	
Whitman College		1
Williams College		2
Wilmington Institute		1
Wittenberg College		1
Woman's College of Baltimore		1
Woman's Medical College of Pennsylvania		1
Worcester Free Public Library		15
Worcester Society of Antiquity		3
"World," The, New York		1
World's Columbian Commission		1
Würzburg Universität		12
Yale University	10	5
Young Men's Mercantile Library Association of Cincinnati		1
Zaragoza Universidad		1
Zoe Publishing Co.		1

LIST OF PRESENTS TO LIBRARY OF THE LICK OBSERVATORY

FOR THE YEAR ENDING JUNE 30, 1891.

PRESENTED BY.	Books.	Pam- phlets.
Academy of Sciences, Bologna	1	
Agamemnone, A.		1
Agamemnone, G.	1	
Backlund, O.	2	1
Bakhuysen, H. G.		4
Bancroft Company 1 electro		
Becker, Dr. George		1
Belopalsky, A. 1 photo		
Bigelow, Prof. F. H. 1 photo		
Burnham, S. W. 1 lantern slide	3	14
Charroppin, Rev. C. M. 2 photos		
Colin, E.		1
Copeland, Prof. Ralph		1
Denning, W. F.		2
Depuy, A. B. 1 moon enlargement		
Downing, A. M. W.		2
Dunner, Prof. N. C.		1
Dziobek, Dr. O.		1
Eastman, Professor		1
Ekama, C.		3
Elliot, Dr. A. H.	1	
Espin, Rev. T. E.		1
Figel, Professor		9
Fryer, John	2	
Gautier, M. R.		1
Goode, Dr. G. Browne		3
Gould, Dr. B. A.		1
Hahneman, M.		1
Hall, Prof. A.		1
Harkness, Prof. W.		3
Holden, E. S. 5 photos, 1 map, 4 engravings	9	101
Hydrographisches Amt., Berlin	1	
Hydrographic Office, Chile	1	
Janssen, M. Cliché of the sun		
Kiaer, Dr. H. I.		1
Kloock, Dr. H.		1
Koukoly, Dr. N. Von 4 photos		
Krueger, Prof. A.	2	2
Langley, Prof. S. P.		1
Leuschner, A. O.		1
Liverpool Literary and Philosophical Society	3	
Lohse, Dr. O. Collection of paper on photography		
Marth, A.		9
Maw, W. M. 2 lantern slides		
Mouck, W. H. S.		1
Newbury, Prof. Spencer		
Newton, Prof. H. A. Negative plates		
		1

LIST OF PRESENTS TO LIBRARY OF THE LICK OBSERVATORY—Continued.

PRESENTED BY.	Books.	Pam- phlets.
Orndorf, W. R.	1	9
Ounen, Professor		
Paris Observatory 3 moon photographs		
Paris Observatory	10	
Porro, Francesco		6
Preston, E. D. 1 photo		1
Pritchett, H. S. Photograph of eclipse of sun		1
Pujazon, Celilio	1	
Pulkowa Observatory	6	
Rio Janeiro Observatory	2	
Royal Observatory of Greenwich	59	
Royal Society		1
Schiaparelli, Prof. G. V.		2
Schorr, Dr. Richard		1
Schwoerer, Emile		1
Smithsonian Institution	1	
Stanford, Hon. Leland		2
Stone, Prof. O.		1
Struve, Dr. Hermann	1	
Tacchini, Prof. P.		1
Todd, Prof. D. P.		11
Tebbutt, John		3
Terby, F.		5
Turner, H. H.		2
Vogel, Prof. H. C.		1
Washburn Observatory		1
Weinek, Prof. L.		1
Wilson, H. C.		1
Wolf, Max.		2
Ximeniano Observatorio	1	
Totals	108	224

The above list does not include volumes which are regularly sent to the Observatory in the way of exchange, etc. These are duly acknowledged in the Catalogue of the Library of the Lick Observatory, Part I, 1891. (See Report of the Solar Eclipse of December, 1889, page 1*.)

THE MUSEUM OF THE UNIVERSITY.

J. J. RIVERS, Curator in Charge.

MEMORANDA OF DONATIONS TO THE MUSEUM DURING 1890-91.

TO THE MUSEUM OF ETHNOLOGY.

- ARNHEIM, JULIUS S., Steuart Street, San Francisco.—Presented a valuable group of four figures, carved in stone taken from a coral reef. It was wrought by the natives of one of the islands of the South Pacific.
- HAY, W. G., Ex. '89.—A large skin canoe, or one-man kyack, from Cape Prince of Wales, Alaska; also, a canoe paddle, and some fishing gearing belonging to a kyack.
- RIDEOUT, JOHN D., Class '90.—Shell money and beads from Indian mound, near Marysville, Cal.
- SMYTH, MRS. W. H., Berkeley.—Ornamental carving on a pipe, worked in black slate by the natives of Queen Charlotte's Island.
- VAN DENBURGH, MRS. D., Los Gatos, Cal.—Rope made of sea grass by South Sea Islanders; also, a piece of ancient tappa cloth from Honolulu.
- WYCKOFF, MISS CORA, Oakland, Cal.—A valuable feather necklace, made from the breast feathers of the little bird of the Hawaiian Islands, called the Oo. The bird is rare, and has a few feathers of the desired color; the ornament is therefore within the reach of the few.

TO THE MUSEUM OF ZOOLOGY.

- ABBOTT, MRS. N., Berkeley, Cal.—The following shells from the West Coast:
Scabaria indianorum, Cp.
Ocenebra lurida, Midd.
Tornatella punctocelata, Cpr.
Lazaria subquadrata, Cpr.
Fusus geniculus, Cond.
Calliostoma costatum, Martyn.
Erato columbella, Mire.
Margarita pupilla, Gld.
Littorina scutellata, Gld.
Leptothyra sanguinea, Cpr.
Phasinella pulloides, Cpr.
Amycla carinata, var. *Hindsii*.
Amycla carinata.
Amycla gausipata, var. *Californica*, Gask.
Drillia moestus, Cpr.
Nassa Cooperi, Fbs.
Amphissa corrugata, Roe.
- ARNHEIM, JULIUS S., Steuart Street, San Francisco—
Cancellaria Crawfordiana, Dall. (M. S.), Drakes Bay.
Purpura crispata, from Kodiak.
Surcula Carpenteriana, Gabb., Drakes Bay.
Nassa Californiana, Conrad, Drakes Bay.
Clementia sub-diaphana, Cpr., Drakes Bay.
Strongylocentrotus purpuratus, Stimp., Alaska.
Tellina venulosa, Kodiak.
Cardium corbis, *Cardium blandum*, Sitka.
Nassa perpinguis, Margarita Bay.
Nassa fossata, Monterey Bay.
- Cancellaria Crawfordiana* is a new species, and *Nassa Californiana* was never noticed before in the living state, and was only known as a fossil of the Miocene period. Both these species were obtained in Drakes Bay by dredging. Besides the above, Mr. Arnheim has presented to the Museum various specimens of marine animals of the classes Crustacea, Radiata, Mollusca, and Pices, and they were either from the waters around the Farallon Islands or from Drakes Bay.
- BENSON, MR., West Berkeley, Cal.—Three eggs and embryos of the great skate, from the bay at West Berkeley; also, some insects.
- BRANDEGEE, T. S., Cal. Acad. of Sciences.—Specimen of *Emys marmorata*, Girard, from Lake County.
- COUGHLAN, JOHN, Ex. '90.—Several varieties of *Tapes staminea*, San Francisco Bay; also, some other shells.
- DE PUE, H., Port Costa, Contra Costa County, Cal.—Some German carp.

- ELLIS, WILLIAM, Berkeley, Cal.—Specimen of the mole *Scalops Californicus*, Ayres, from the grounds of the U. C.
- EXCHANGE, Yale University.—Specimens of *Disconisca levis*, from Callao, and *Terebratulina septentrionalis*, from Eastport, Maine.
- EIGENMAN, MRS. ROSA, San Diego, Cal.—Four egg cases of the shark *Scylorhinus ventriosus*, Garman.
- FUCHS, CHARLES, San Francisco.—Specimen of *Latirus ceratus*, Gray, from Panama Bay.
- HAY, W. G., EX. '89.—A good skin of *Putorius Kanesti*, Baird, from Siberia; also, a human skull from Siberia, and numerous teeth of seals.
- JOSEPH, NATHAN, San Francisco.—Specimen of the great Rock crab, from New Caledonia.
- KNAPP, M. A., '87.—Example of the rock ptarmigan, from Douglas Island, Alaska; also, *Macoma inconspicua*, Sowby, from Douglas Island, Alaska.
- KOEBELE, ALBERT, Alameda, Cal.—Skin of the little chief hare, *Lagomys princeps*, from Easton, Washington.
- LA MOTTE, GERTRUDE, Glen Ellen, Sonoma County, Cal.—A living specimen of *Amblystoma mavortium Californiense*, Cope., and six living examples of *Emys marmorata*, Girard.
- MORGAN, MISS JULIA, Class '94, Oakland, Cal.—A series of fine shells of *Cypræ cervinetta*, from Acapulco.
- RAYMOND, W. J., Instructor, U. C.—Sets of the following mollusks:
Melampus olivaceus, Cpr., San Diego, Cal.
Monocerus lugubre, Sowby, Ensenada, L. C.
Monocerus egonotum, Conr., Bolinas, Cal.
Olivella Batica, Cpr., Sitka.
Purpura crispata, Northern var.
Macoma secta, Bolinas Bay, Cal.
Planorbis subcrenatus, Cpr., var. *disjectus*, Cp., Tuolumne Meadows.
Mesodon armigerus, Ancy., Presidio, San Francisco.
Sphærium Raymondi, J. G. C., Tuolumne County, Cal.
Chlorostoma gallina, Fbs., Cerros Island.
Macoma inquinata, Desh., Bolinas Bay.
Macoma inquinata, Desh., Fort Point, San Francisco.
Mytilus edulis, Linn., var. *glomeratus*, Gld., Point Lobos, San Francisco.
- REED, MISS CLARA, Alameda, Cal.—A fine specimen of the great West Coast clam *Glycimeris generosa*, Gld., from Henderson Bay, Wash.
- SMITHSONIAN INSTITUTION.—A specimen of the rare volutoid shell, *Scaphella sternsii*, Dall., from the Aleutian Islands.
- SUTTON, DR. F. S., Class '76.—Eight specimens of *Coleoptera* from Panama, and one example each of *Orthoptera* from Panama and Salvador.
- VAN DENBURGH, MRS. D., Los Gatos, Cal.—The following valuable shells:
Cypræa orantia, Linn., South Pacific.
Cypræa Lynx, Linn., East Indies.
Cypræa intermedia, Kizner, Waikiki.
Cypræa caurica, Linn., East Indies.
Cypræa caputserpentis, Linn., Waikiki.
Cypræa erosa, Linn., Navigator Island.
Cypræa carneola, Linn., East Indies.
Cypræa isabella, Linn., East Indies.
Cypræa annulata, Gray, East Indies.
Cypræa monita, Linn., Pacific Ocean.
Cypræa helvola, Linn., Pacific Ocean.
Dolium perdix, Indo-Pacific.
Lingula hyans, Rio de Janeiro, Brazil.
Turritella gonistoma, Val., Gulf of California.
Oliva erythrostoma, Linn., Mauritius.
Mitra Pontificalis, Linn., Tahiti.
Mitra Episcopalis, Linn., East Indies.
Natica melanostoma, Lam.
Natica mammilla, Linn., East Indies.
Polydonta tentorium, Linn., East Indies.
Nerita polita.
Natica Prichardi, Fbs., Gulf of California.
Littorina conspersa, Honolulu.
Purpura hippocastanum, Indo-Pacific.
Riccinula albolabris, Honolulu.
Listrum tuberculatum, Waikiki beach, Honolulu.
Nassa hirta, Honolulu.
Triton tuberosum, Lam., Pacific.
Aplustrum aplustrie, L., Honolulu.
Achatinella viridans, Migh., Honolulu.
Cerithidea sacra, Gld., California.
Strombus lentigonotus, Gld.
Strombus variabilis, Swainson.
Avicula fureata, Gld.

VAN DYKE, E. C., Class '93.—Specimens of *Aplodon columbiana* and *Hyalina Breweri*, both from Shasta district.

WALLACE, F. S., Sumner, Kern County, Cal.—A good example of a newly described bat.

WILLIAMS, MRS. BURTON, Los Angeles County, Cal.—The rare shells, *Modiola fornicata*, Cpr., and *Periploma discus*, Stearns, from San Pedro Bay.

TO THE MUSEUM OF PALEONTOLOGY.

ANDERSON, DR. C. H., Santa Cruz, Cal.—Specimens of *Echinarachnius Brewertianus*, Rem., from Felton, Santa Cruz Mountains.

ARNHEIM, JULIUS S., Steuart Street, San Francisco.—*Inoceramus Elliotti*, from the Cretaceous of Nunamac Island, Alaska.

VAN DENBURGH, MRS. D., Los Gatos.—Four vertebrae of fossil whale, dug from a cave in a cliff at Los Gatos.

WELLENDOFF, DR. L., Engineer of Alameda Water Company, at Berkeley, while improving the water supply on the Berkeley hills, unearthed and presented to the Museum certain remains of the elk (*Cervus Canadense*).

FINANCIAL APPENDIX.

**STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE FISCAL YEAR
ENDING JUNE 30, 1891.**

RECEIPTS.	
Revenue	\$221,968 58
D. O. Mills Endowment—interest	5,445 49
Michael Reese Library Fund—interest	2,608 74
Edward Tompkins Endowment	12,790 00
Edward Tompkins Endowment—interest	491 81
University Medal Fund—interest	203 40
Sales from land grant of 150,000 acres	14,294 85
State fees	45 00
Students' deposits—Chemical Laboratory	1,637 27
Students' deposits—Mining Laboratory	290 92
Students' deposits—Physical Laboratory	265 50
From Treasurer of United States, account of Agricultural Experiment Sta- tion Fund	15,000 00
From Treasurer of United States, account of Morrill College Aid Fund	15,000 00
Excess payments	26 80
Pioche Donation—interest	138 24
Library fines	2 25
Military Department	1 50
Horace Davis—Contingent Fund	200 00
German Savings and Loan Society	887 41
Humboldt Savings and Loan Society	157 94
San Francisco Savings Union	30,920 40
Security Savings Bank	27,896 54
Union Savings Bank of Oakland	28,698 32
Oakland Bank of Savings	383 90
Bills receivable	105,646 00
State Treasurer—redeemed bonds	76,500 00
Cash balance on hand June 30, 1890	82,014 41
	\$643,509 27
DISBURSEMENTS.	
Bills receivable	\$141,500 00
D. O. Mills Endowment—salary of professor	3,999 96
Michael Reese Library Fund	3,846 44
Edward Tompkins Endowment	8 15
University Medal Fund	250 00
Excess payments	4,459 02
State fees	99 00
Toland Medical College	97 70
Chemical Laboratory building	56,081 19
Building for combustibles	1,525 00
E. W. Hilgard—Contingent Fund	50 00
Richard Gird—Contingent Fund	150 00
Salaries	142,118 28
Administration	14,515 96
College of Agriculture	8,564 58
College of Chemistry	5,061 26
College of Civil Engineering	271 79
College of Mechanics	631 35
College of Mining	790 91
Department of Biology	267 80
Department of Botany	680 57
Department of Lick Observatory	6,922 79
Department of Military Science	553 64
Department of Mineralogy	258 61
Department of Physics	1,667 12
Department of Physical Culture	1,435 04
Library	2,102 63
Museum	686 98
University site improvement	13,014 40
University Printing Office	343 65
Agricultural Experiment Stations	10,220 04
Morrill College Aid Fund	2,435 20
Cash balance on hand June 30, 1891	218,990 21
	\$643,509 27

TRIAL BALANCE—JUNE 30, 1891.

	Dr.	Cr.
Agricultural Experiment Stations		\$923 39
Buildings	\$483,807 65	
Building Fund—from one cent tax		106,000 00
Bills receivable	886,000 00	
Cash—Louis Sloss, Treasurer	218,960 21	
Consolidated Perpetual Endowment Fund		1,749,063 80
D. O. Mills Endowment		98,867 69
Diploma Fund		20 00
Edward Tompkins Endowment		17,141 78
Excess payments on minimum lands		9,496 69
Excess payments due United States		4,028 92
German Library Fund		515 11
German Savings and Loan Society	515 11	
Lick Observatory Fund		90,000 00
Oakland Bank of Savings	7,613 45	
F. L. A. Pioche Donation		2,292 70
Revenue account		51,877 71
Reese Library Fund		53,112 06
State appropriations		1,650 28
Students' deposits		5,843 39
State Treasurer	991,000 00	
State fees		35 00
San Francisco Savings Union	9,496 99	
Security Savings Bank	6,075 38	
Toland Medical College		199 01
University Medal Fund		3,268 22
Union Savings Bank of Oakland	7,074 57	
Chemical Laboratory building	74,271 64	
Morrill College Aid Fund		12,564 80
Bonté, J. H. C., Secretary—Contingent Fund	486 37	
Caminetti, A.—Contingent Fund	150 00	
Gird, Richard, Patron South Cal. Station—Contingent Fund	150 00	
Holden, E. S., Director Lick Observatory—Contingent Fund	500 00	
Hilgard, E. W., Director Ag. Ex. Stations—Cont. Fund	200 00	
Moore, B. F., Patron Tulare Station—Contingent Fund	150 00	
Salaries, expenses, and receipts to January, 1889		566,150 56
State of California, diverted funds	79,500 00	
Webster, J. V., Patron Paso Robles Station—Cont. Fund	150 00	
	\$2,766,051 37	\$2,766,051 37

STATEMENT OF BONDS AND MORTGAGES—JUNE 30, 1891.

DESCRIPTION.	Date of Maturity.	Rate of Interest.	Par Value.	Annual Interest.
<i>Bonds.</i>				
State Capitol	Jan. 2, 1893..	6	\$610,000 00	\$36,600 00
State of California	Jan. 2, 1893..	6	141,000 00	8,460 00
City and County of San Francisco—				
School bonds	July 1, 1894..	6	30,000 00	1,800 00
Park and Avenue	Jan. 1, 1898..	6	50,000 00	3,000 00
Park Improvement	April 1, 1904..	6	1,000 00	60 00
Dupont Street	July 1, 1897..	—	20,000 00	—
Montgomery Avenue	Jan. 1, 1903..	—	22,000 00	—
Alameda School	Sept. 4, 1898..	6	4,000 00	240 00
Marin County	May 5, 1896..	7	50,000 00	3,500 00
Tehama County	July 2, 1903..	5	29,500 00	1,475 00
Fresno County	Jan. 1, 1898..	7	12,500 00	875 00
Plumas County	Oct. 3, 1901..	6	8,000 00	360 00
Kern County	Nov. 1, 1900..	7	15,000 00	1,050 00
Total invested in bonds			\$991,000 00	\$57,420 00
Diverted funds		6	\$79,750 00	\$4,785 00
<i>Mortgages.</i>				
Oakland real estate			\$211,000 00	\$13,972 80
San Francisco real estate			390,000 00	20,949 96
Merced County real estate			47,000 00	3,290 04
Stockton real estate			25,000 00	1,656 25
San José real estate			15,000 00	1,060 00
Alameda real estate			80,000 00	5,954 88
Marin County real estate			50,000 00	3,000 00
Tehama County real estate			25,000 00	1,750 00
Solano County real estate			23,000 00	1,610 00
Mendocino County real estate			20,000 00	1,400 00
Total invested in mortgages			\$886,000 00	\$54,633 93
RECAPITULATION.				
Total invested in bonds			\$991,000 00	\$57,420 00
Total invested in mortgages			886,000 00	54,633 93
Diverted funds			79,750 00	4,785 00
Total			\$1,956,750 00	\$116,838 93

SEGREGATION OF BONDS AND MORTGAGES.

	Par Value.	Interest.
Consolidated Perpetual Endowment Fund—diverted funds..	\$79,750 00	\$4,785 00
Mortgages	737,694 73	45,477 69
Bonds	903,000 00	52,435 00
Lick Observatory Fund—bonds	88,000 00	4,985 00
Mortgages	2,000 00	120 00
Michael Reese Library Fund—mortgages	40,000 76	2,487 48
D. O. Mills Endowment—mortgages	87,073 66	5,267 04
Medal Fund—mortgages	3,000 00	196 80
Edward Tompkins Endowment—mortgages	13,875 85	938 04
Pioche Donation Fund—mortgages	1,851 52	146 88
	\$1,956,246 52	\$116,838 93

STATE TAX OF ONE CENT ON EVERY \$100 VALUATION—FOR THE YEAR
ENDING JUNE 30, 1891.

October 31, 1890—Controller's warrant.....	\$10,581 00
December 31, 1890—Controller's warrant.....	463 41
March 31, 1891—Controller's warrant.....	91,390 11
	<hr/> \$102,434 52

Dr.		UNIVERSITY MEDAL FUND.		Cr.	
1874.				1873.	
July 31 ..	To cash—Medal to F. Otis	\$125 00		Mar. 13.	By donations
Oct. 10..	To cash—Medal to J. M. Whitworth	125 00		June 30.	By interest
Oct. 10..	To cash—Medal to F. H. Whitworth	125 00		Dec. 31.	By interest
1875.				1874.	
July 16.	To cash—Medal to T. F. Barry	125 00		June 30.	By interest
1876.				Dec. 31.	By interest
Nov. 30..	To cash—Medal to D. B. Huntley	125 00		1875.	
Nov. 30..	To cash—Medal to F. L. Button	125 00		June 30.	By interest
1878.				Dec. 31.	By interest
Oct. 31..	To cash—Medal to Theodore Gray	125 00		1876.	
Oct. 31..	To cash—Medal to Jos. Hutchinson	128 50		June 30.	By interest
1879.				Dec. 31.	By interest
Aug. 31..	To cash—Medal to Fremont Morse	128 50		1877.	
1880.				Jan. 31.	By interest
July 31..	To cash—Medal to Mary Hawley	128 50		July 30.	By interest
1883.				1878.	
July 31..	To cash—Medal to W. W. Deamer	125 00		Jan. 31.	By interest
1884.				July 31.	By interest
Aug. 30..	To cash—Medal to C. A. Ramm	125 00		1879.	
1885.				Jan. 31.	By interest
July 14..	To cash—Medal to C. B. Wakefield	125 00		July 31.	By interest
1886.				1880.	
July 31..	To cash—Medal to Frank Fisher	125 00		Jan. 31.	By interest
1887.				July 31.	By interest
July 31..	To cash—Medal to Jacob Samuels	125 00		1881.	
1889.				Jan. 31.	By interest
May 15..	To cash—Medal to J. E. Beard	125 00		July 31.	By interest
1889.				1882.	
June 30..	To cash—Medal to H. C. Moffitt	125 00		Jan. 30.	By interest
1890.				July 31.	By interest
July 9..	To cash—Medal to O. K. McMurray	125 00		1883.	
1891.				Jan. 31.	By interest
June 30..	To medal	125 00		July 31.	By interest
June 30..	To balance	3,268 22		1884.	
				Jan. 31.	By interest
				July 31.	By interest
				1885.	
				Jan. 31.	By interest
				July 31.	By interest
				1886.	
				Jan. 31.	By interest
				July 31.	By interest
				1887.	
				Jan. 31.	By interest
				July 31.	By interest
				1888.	
				Jan. 31.	By interest
				July 31.	By interest
				1889.	
				Feb. 28.	By interest
				July 31.	By interest
				1888.	
				June 30.	By interest
				1889.	
				Jan. 1.	By interest
				June 30.	By interest
				1890.	
				June 30.	By interest
				June 30.	By Union Savings Bank
				June 30.	By Union Savings Bank
				1891.	
				June 30.	By interest
				June 30.	By Union Savings Bank
				June 30.	By Union Savings Bank
		\$5,653 72			\$5,653 72

Dr. EDWARD TOMPKINS ENDOWMENT FUND—(RENT ACCOUNT).

Cr.

1874.			1872.		
Jan. 2.	To sundries	\$148 00	June 18.	By cash	\$100 00
Aug. 14.	To cash	100 00	1873.		
1887.			Mar. 13.	By cash	100 00
Nov. 10.	To cash	75 50	June 30.	By interest	2 35
1888.			Dec. 31.	By interest	5 04
Aug. 31.	To cash	21 00	1874.		
1889.			June 30.	By interest	6 08
Jan. 10.	To cash	4 20	Aug. 19.	By cash	100 00
1890.			Nov. 14.	By cash	100 00
Nov. 12.	To cash	7 15	Dec. 31.	By interest	9 27
1891.			1875.		
Jan. 14.	To cash	1 00	June 30.	By interest	15 22
			Dec. 11.	By cash	125 00
			1876.		
			June 30.	By interest	22 66
			Dec. 18.	By cash	125 00
			1877.		
			Jan. 31.	By interest	39 50
			July 31.	By interest	29 08
			1878.		
			Jan. 31.	By interest	28 64
			Mar. 31.	By cash	125 00
			July 31.	By interest	30 00
			1879.		
			Jan. 31.	By interest	32 57
			May 31.	By cash	125 00
			July 31.	By interest	34 14
			1880.		
			Jan. 31.	By interest	36 69
			June 30.	By cash	125 00
			July 31.	By interest	32 55
			1881.		
			Jan. 31.	By interest	37 28
			July 31.	By interest	32 63
			July 31.	By cash	175 00
			1882.		
			Jan. 31.	By interest	36 45
			Jan. 31.	By cash	175 00
			July 31.	By interest	37 56
			1883.		
			Jan. 31.	By interest	39 69
			Jan. 31.	By cash	175 00
			July 31.	By interest	41 93
			1884.		
			Jan. 31.	By interest	42 80
			Feb. 29.	By cash	175 00
			July 31.	By interest	46 45
			1885.		
			Jan. 31.	By interest	48 71
			Mar. 31.	By cash	175 00
			July 31.	By interest	53 79
			Oct. 31.	By cash	200 00
			1886.		
			Jan. 31.	By interest	58 44
			July 31.	By interest	60 24
			1887.		
			Feb. 28.	By cash	261 98
			July 31.	By interest	66 87
			1888.		
			Jan. 31.	By interest	68 30
			Feb. 1.	By cash	15 17
			Mar. 1.	By cash	15 17
			April 1.	By cash	15 17
			May 1.	By cash	15 17
			June 1.	By cash	15 17
			July 1.	By cash	15 17
			July 1.	By interest	23 91
			Aug. 1.	By cash	15 17
			Sept. 1.	By cash	15 17
				Amount carried forward	\$3,502 67
	Amount carried forward	\$357 45			

Dr. EDWARD TOMPKINS ENDOWMENT FUND (RENT ACCOUNT)—Continued. Cr.

1891.	Amount brought forward		1888.	Amount brought forward	
June 30.	To balance	\$357 45 4,014 28	Oct. 1.	By cash	\$3,502 67
			Nov. 1.	By cash	15 17
			Dec. 5.	By cash	15 17
			Dec. 5.	By cash	150 00
			Dec. 31.	By cash	15 17
			Dec. 31.	By interest	47
			1889.		
			Jan. 1.	By cash	15 17
			Feb. 1.	By cash	15 17
			Mar. 1.	By cash	15 17
			April 1.	By cash	15 17
			May 1.	By cash	15 17
			May 1.	By cash	15 17
			June 1.	By cash	164 50
			June 1.	By cash	15 17
			June 1.	By interest	4 32
			July 31.	By cash	15 17
			Aug. 31.	By cash	16 72
			Sept. 30.	By cash	20 70
			Oct. 31.	By cash	8 62
			Nov. 30.	By cash	3 54
			Dec. 31.	By cash	3 54
			Dec. 31.	By Union Savings Bank	4 65
			1890.		
			Jan. 31.	By cash	153 54
			Feb. 28.	By cash	3 54
			Mar. 31.	By cash	3 54
			April 30.	By cash	3 54
			May 31.	By cash	3 54
			June 30.	By cash	3 54
			June 30.	By Union Savings Bank	4 78
			July 31.	By cash	3 54
			Aug. 31.	By cash	3 54
			Sept. 30.	By cash	3 54
			Oct. 31.	By cash	3 54
			Nov. 30.	By cash	3 54
			Dec. 30.	By cash	3 54
			Dec. 30.	By Union Savings Bank	4 91
			1891.		
			Jan. 31.	By cash	3 54
			Feb. 28.	By cash	3 54
			Mar. 31.	By cash	58 68
			April 30.	By cash	3 54
			May 30.	By cash	3 54
			June 30.	By cash	60 23
			June 30.	By Union Savings Bank	5 04
	Total	\$4,371 71		Total	\$4,371 71

DISBURSEMENTS FOR THE YEAR ENDING JUNE 30, 1891.

APPENDIX No. 1—*Salaries.*

College of Agriculture.....	\$13,441 39
College of Chemistry.....	12,506 05
College of Civil Engineering.....	12,001 72
College of Letters.....	28,681 12
College of Mechanics.....	12,802 45
College of Mining.....	11,256 37
Department of Lick Observatory.....	17,500 38
Department of Physical Culture.....	2,499 96
Library.....	3,600 00
Museum.....	1,500 00
Administration.....	19,895 06
University Printing Office.....	720 00
Agricultural Experiment Stations.....	5,350 86
University Site Improvements.....	362 92
Morrill College Aid Fund.....	881 86

\$142,950 14APPENDIX No. 2 A—*Administration—Fuel.*

Fifty tons Wellington coal—Renton Coal Co.....	\$701 40
Thirteen tons Anthracite coal—Renton Coal Co.....	107 70
One hundred and forty-five grain sacks—Renton Coal Co.....	7 35
Thirty-nine gunnie sacks—Renton Coal Co.....	3 80

\$820 35APPENDIX No. 2 B—*Administration—Equipment and Repairs.*

One rack for hauling chairs—Nelson & McLellan.....	\$14 00
Painting building—George C. Gottung.....	660 00
Repairing roof of Library building—W. B. Glenn.....	75 00
Repairing blackboards—W. H. Andrews & Co.....	350 00
Repairing blackboards—W. H. Andrews & Co.....	32 00
Painting buildings—George C. Gottung.....	460 00
Twenty dozen pairs 2-inch iron butts—Savage Bros.....	5 50
Two gross hat hooks—Savage Bros.....	2 75
One gross porcelain knobs—Savage Bros.....	1 50
One gross japanned buttons.....	1 00
Thirty-six chairs—California Furniture Co.....	81 00
Repairing roof—John J. Menges.....	12 00
Two pounds solder—John J. Menges.....	40
One sheet tin—John J. Menges.....	10
Lettering office door—J. A. Johnson.....	6 00
Labor for month of July—John Davis.....	54 00
Five hundred feet 3x4 redwood—Henry W. Taylor.....	10 00
Five hundred feet 1x6 redwood—Henry W. Taylor.....	20 00
Five hundred feet 2x4 pine—Henry W. Taylor.....	
Nine hundred and forty-eight feet 2x12 redwood—Henry W. Taylor.....	36 20
Five hundred feet 1x12 redwood—Henry W. Taylor.....	
Mill work—Henry W. Taylor.....	10 25
Cartage—Henry W. Taylor.....	2 00
Five hundred feet 1x3 redwood—Henry W. Taylor.....	25 00
Five hundred feet 1x12 redwood—Henry W. Taylor.....	
One thousand and fifty-two feet 2x12 redwood—Henry W. Taylor.....	26 30
Five hundred feet 1x3 pine—Henry W. Taylor.....	12 50
One thousand feet 1x4 T. and G. pine—Henry W. Taylor.....	34 00
Three hundred feet 2x3 T. and G. pine—Henry W. Taylor.....	6 00
Five hundred feet 1x4 T. and G. and B. redwood—Henry W. Taylor.....	17 00
Labor in North Hall—J. M. McNamara.....	11 35
Seventy-five pounds 1½-inch lead pipe—J. M. McNamara.....	7 00
Twenty-four feet ¾-inch galvanized pipe—J. M. McNamara.....	2 40
Five ¾-inch fittings—J. M. McNamara.....	50
Four pounds solder—J. M. McNamara.....	1 00
Lining sink—J. M. McNamara.....	6 00
Twelve feet 3-inch spiral gas leader—J. M. McNamara.....	1 80
Repairing basin—J. M. McNamara.....	1 00
One sack charcoal—J. M. McNamara.....	96
Labor in North Hall—J. M. McNamara.....	12 35
Twenty feet 2-inch cast-iron pipe—J. M. McNamara.....	2 00
Branch and bend—J. M. McNamara.....	1 05
One globe valve, 1x1½—J. M. McNamara.....	1 95
Thirty-five pounds 1½-inch lead pipe—J. M. McNamara.....	3 50
Seven pounds solder—J. M. McNamara.....	1 75

Two by two-inch brass ferrules—J. M. McNamara.....	\$0 35
One sack charcoal—J. M. McNamara.....	95
Cement—J. M. McNamara.....	50
One 1½-inch trap.....	1 10
Twelve pounds calking lead—J. M. McNamara.....	50
Painting buildings—Geo. C. Gottung.....	161 25
Sixty-six yards Brussels carpet—Jos. Fredericks & Co.....	99 00
Thirty-three and one third yards Brussels carpet—Jos. Fredericks & Co.....	50 00
Six yards Brussels carpet—Jos. Fredericks & Co.....	9 00
Two oak table desks—Jos. Fredericks & Co.....	70 00
Twenty arm chairs, in leather—Jos. Fredericks & Co.....	210 00
Ten oak tables—Geo. H. Fuller.....	95 00
One oak chair—Geo. H. Fuller.....	10 00
One hat rack—Geo. H. Fuller.....	10 00
One bookcase—Geo. H. Fuller.....	20 00
One half dozen cuspidors—Payot, Upham & Co.....	3 75
Painting engine house and boiler house—Geo. C. Gottung.....	40 00
Painting agricultural building—Geo. C. Gottung.....	100 00
Painting observatory—Geo. C. Gottung.....	75 00
Painting horse shed—Geo. C. Gottung.....	35 00
Painting lockers, etc.—Geo. C. Gottung.....	54 90
Repairing chimneys, South Hall—Geo. C. Gottung.....	5 00
Material for eighty new lockers—Niehaus Bros. & Co.....	118 00
Twenty feet 3x4 gutters—Niehaus Bros. & Co.....	1 20
Crown molding—Niehaus Bros. & Co.....	40
Fifty pounds putty—E. G. Buswell & Co.....	2 50
Two rolls border—H. Richards.....	75
One yard felt—W. & J. Sloane & Co.....	1 25
Five yards gimp—W. & J. Sloane & Co.....	25
One dozen locks—Savage Bros.....	3 00
One lock—Savage Bros.....	15
One brush—E. G. Buswell & Co.....	50
Moving stove—J. M. McNamara.....	2 50
Zinc for stove—J. M. McNamara.....	1 75
Damper for stove—J. M. McNamara.....	25
Zinc flashing—J. M. McNamara.....	1 00
Isinglass—J. M. McNamara.....	25
One galvanized drum—J. M. McNamara.....	3 80
Labor—John Davis.....	52 00
Expressage—Patterson & Co.....	9 25
One zinc oil can—The Samuel Hill Co.....	20
Plastering in North Hall—H. L. Whitney.....	30 00
Four thousand cubic feet gas—Oakland Gas Co.....	10 00
Sixty perforated chair seats—R. F. Osborn & Co.....	14 00
Kalsomining North Hall—C. B. Rutherford.....	153 75
Oiling slate on South Hall—Geo. C. Gottung.....	30 00
Three hundred and thirty yards cocoa matting—McGovern & Cahill.....	222 75
One hundred and fifteen yards cocoa matting—McGovern & Cahill.....	77 63
Two marble basins, waste pipe, and faucets—J. M. McNamara.....	40 00
Sixteen feet stove-pipe—M. De La Montanya.....	5 60
Eight feet stove-pipe—M. De La Montanya.....	2 40
Four corrugated elbows—M. De La Montanya.....	3 00
One corrugated elbow—M. De La Montanya.....	65
One damper—M. De La Montanya.....	25
One half day's labor—M. De La Montanya.....	3 00
Labor—John Davis.....	52 00
One oak desk—Geo. H. Fuller.....	60 00
One thousand feet redwood—Henry W. Taylor.....	20 00
Eight thousand shingles—Henry W. Taylor.....	18 00
One thousand feet redwood—Henry W. Taylor.....	20 00
One inkstand—Samuel Carson.....	1 50
Painting buildings—Geo. C. Gottung.....	623 75
Picture molding—Niehaus Bros. & Co.....	3 50
Two washstands—Niehaus Bros. & Co.....	6 50
One pulley—Savage Bros.....	10
Sash cord—Savage Bros.....	25
One dozen staples—Savage Bros.....	10
One half dozen screw eyes—Savage Bros.....	05
One dozen packages matches—J. McClain.....	50
One dozen ½ and ¾-inch caps—J. M. McNamara.....	50
Two spools copper wire—Savage Bros.....	1 00
Molding hooks—Savage Bros.....	50
One jug and glass—Fred. Lautzen.....	60
One iron safe—A. L. Jones & Co.....	500 00
Labor for month of October—James Tait.....	54 00
One bronze lock—Dunham, Carrigan & Hayden Co.....	4 60

One pair butts—Dunham, Carrigan & Hayden Co.	\$2 25
Three dozen cup locks—Dunham, Carrigan & Hayden Co.	18 00
One dozen Yale latches—Dunham, Carrigan & Hayden Co.	22 50
Nine dozen key blanks—Dunham, Carrigan & Hayden Co.	4 50
One Empire ladder, 10-foot—G. W. Armes & Co.	3 50
One dozen No. 2 Excelsior brooms—G. W. Armes & Co.	2 55
One dozen floor brushes—G. W. Armes & Co.	12 75
One dozen dust brushes—G. W. Armes & Co.	8 08
One half dozen dustpans—G. W. Armes & Co.	60
One half dozen fire shovels—G. W. Armes & Co.	60
One dozen galvanized coal hods—G. W. Armes & Co.	4 50
One dozen turkey dusters—G. W. Armes & Co.	6 80
Forty pounds white Castile soap—G. W. Armes & Co.	3 70
One dozen galvanized iron pails—G. W. Armes & Co.	4 15
One can matches—G. W. Armes & Co.	1 75
Six sponges—G. W. Armes & Co.	1 00
One No. 20 Bradford stove—M. De La Montanya	16 00
Eight joints stove-pipe—M. De La Montanya	2 40
Two corrugated elbows—M. De La Montanya	1 30
One collar and damper—M. De La Montanya	35
One half sheet zinc—M. De La Montanya	75
Labor and cartage—M. De La Montanya	3 00
Two cupboard catches—Savage Bros.	20
Four pairs butts—Savage Bros.	80
Three gallons varnish—E. G. Buswell & Co.	12 00
Two thousand five hundred cubic feet gas—Oakland Gas Co.	6 25
Five oak Vienna chairs—Joseph Fredericks & Co.	12 50
Oiling and whitewashing brick on new Chemical Laboratory—Geo. C. Gottung.	240 00
Twenty-four pounds lead pipe—J. M. McNamara	2 40
One $\frac{3}{4}$ -inch plain bibb—J. M. McNamara	1 25
Ten feet 2-inch galvanized pipe—J. M. McNamara	1 00
Solder and coal—J. M. McNamara	1 00
Labor on same—J. M. McNamara	3 35
One chair cushion—California Furniture Co.	6 00
One 8-inch hinge, hasp, and screws—A. Erlandsen	15
One dozen key blanks—Dunham, Carrigan & Hayden Co.	1 80
Three gross screw hooks—Dunham, Carrigan & Hayden Co.	1 44
One gross washers for spindle—Dunham, Carrigan & Hayden Co.	15
One gross knob screws—Dunham, Carrigan & Hayden Co.	60
One gross blued screws—Dunham, Carrigan & Hayden Co.	45
One half dozen spindles—Dunham, Carrigan & Hayden Co.	16
Repairing door check—Frank D. Morrill	1 50
Repairing three shower baths in Gymnasium, and material—J. M. McNamara	4 50
Repairing pipe in South Hall—J. M. McNamara	3 00
Two terra-cotta thimbles—Savage Bros.	80
One half dozen glasses—J. McLain	30
Repairing door checks—Frank D. Morrill	1 75
Two yards enamel cloth—W. & J. Sloane & Co.	1 20
One paper tacks—W. & J. Sloane & Co.	10
One yard felt—W. & J. Sloane & Co.	1 25
One No. 20 Bradford stove—M. De La Montanya	16 00
Nine joints stove-pipe—M. De La Montanya	2 70
Two elbows, corrugated—M. De La Montanya	1 30
One elbow, pieced—M. De La Montanya	30
One half sheet zinc—M. De La Montanya	75
Damper—M. De La Montanya	25
Collar—M. De La Montanya	10
One day's labor—M. De La Montanya	3 00
One oak desk—George H. Fuller	40 00
One office chair—George H. Fuller	7 00
One 6-foot standing desk—George H. Fuller	18 00
One bookkeeper's chair—George H. Fuller	5 50
One revolving bookcase—George H. Fuller	21 00
Forty brass picture hooks—Savage Bros.	1 00
Two dozen P. S. rod chairs—California Furniture Co.	38 00
Twenty-four arm rests—California Furniture Co.	16 00
Labor for month of November	50 00
Two 6-inch bolts—Savage Bros.	50
Six elbow catches—Dunham, Carrigan & Hayden Co.	60
Two Russia fenders—Taylor Goodrich	5 00
One bowl and setting—Sanitary Plumbing Co.	2 75
Thirty-seven yards linoleum—McGovern & Cahill	35 15
One Smyrna rug—McGovern & Cahill	8 00
Gas pipe and labor, South Hall—J. M. McNamara	7 00
Three tables—Niehaus Bros. & Co.	12 00
Four new cases—Niehaus Bros. & Co.	63 00

Three small doors—Niehaus Bros. & Co.	\$3 00
Eight hundred feet white cedar—Niehaus Bros. & Co.	88 00
One hundred and fifty feet pine—Niehaus Bros. & Co.	88 00
One door—Niehaus Bros. & Co.	
Thirteen hundred cubic feet gas—Oakland Gas Co.	3 25
Twelve hundred cubic feet gas—Oakland Gas Co.	3 00
Labor for month of December	54 00
One galvanized iron screen—M. De La Montanya	8 00
One half dozen cupboard catches—A. Erlandsen	50
One third dozen window catches—A. Erlandsen	50
Four and one half yards duck—Neville & Co.	2 25
One dozen joint butts—Savage Bros.	60
Four dozen screws—Savage Bros.	30
One half dozen wardrobe hooks—A. Erlandsen	1 20
One half dozen hooks and eyes—A. Erlandsen	20
One No. 2 Cottage Home stove—M. De La Montanya	9 00
Seven joints Russia iron pipe—M. De La Montanya	5 25
Three corrugated elbows—M. De La Montanya	3 00
One square elbow—M. De La Montanya	75
Damper and collar—M. De La Montanya	85
One stove board—M. De La Montanya	2 50
Setting up same—M. De La Montanya	3 00
Plumbers' repairs, South Hall—J. M. McNamara	9 00
Plumbers' repairs, North Hall—J. M. McNamara	4 00
Two Dart stoves—M. De La Montanya	13 00
Six joints stove-pipe—M. De La Montanya	1 50
Two elbows—M. De La Montanya	50
Two dampers—M. De La Montanya	50
Two collars—M. De La Montanya	20
One sheet zinc—M. De La Montanya	1 50
Two safety wall tubes—M. De La Montanya	3 00
Labor setting up—M. De La Montanya	5 00
Tinning Library building—J. M. McNamara	25 00
Two Oakland directories—Dutton & Partridge	10 00
One antique desk—George H. Fuller	30 00
Filing four saws—A. Erlandsen	1 50
One set Yale casters—A. Erlandsen	65
One terra-cotta thimble—Savage Bros.	65
Labor for month of January	54 00
Eight hundred cubic feet gas—Oakland Gas Co.	2 00
Eighteen joints stove-pipe—J. M. McNamara	6 60
Two elbows—J. M. McNamara	70
Labor setting up stove, North Hall—J. M. McNamara	3 50
Repairing water-closet, North Hall—J. M. McNamara	4 25
One piece gutter—Niehaus Bros. & Co.	1 60
Two basin faucets, and labor—J. M. McNamara	4 00
Fitting key—A. Erlandsen	25
Collar for stove-pipe—J. J. Menges	25
Damper for stove-pipe—J. J. Menges	25
Fitting same—J. J. Menges	50
One and one half yards green drill—W. & J. Sloane & Co.	75
Two papers tacks—A. Erlandsen	10
Two key blanks—A. Erlandsen	20
Repairing spring—A. Erlandsen	25
Repairing shower bath—J. M. McNamara	1 50
Labor for month of February—John Davis	51 00
Three thousand two hundred cubic feet gas—Oakland Gas Co.	8 00
Labor for month of March—John Davis	52 00
One Cottage Home stove—M. De La Montanya	9 00
One joint Russia iron pipe—M. De La Montanya	75
One Russia iron fireboard—M. De La Montanya	1 50
One damper—M. De La Montanya	25
One oxidized W. L. board—M. De La Montanya	2 50
Labor and cartage on same—M. De La Montanya	3 00
Three dozen stools—Indianapolis Furniture Co.	27 00
Six kitchen tables—E. Hook	12 00
One gallon alcohol—E. G. Buswell & Co.	3 00
Two pounds shellac—E. G. Buswell & Co.	1 00
One hundred and twelve feet white cedar—Niehaus Bros. & Co.	18 00
One thousand feet lattice—Niehaus Bros. & Co.	10 00
One gallon linseed oil—H. Richards	80
Two wood clamps—A. Erlandsen	1 10
Two chest locks—A. Erlandsen	50
One gas lighter—A. Erlandsen	75
One box tapers—A. Erlandsen	25
Three yards oilcloth—Max. Greenhood & Co.	1 20

Pipe and labor for nine brackets—J. M. McNamara	\$16 00
Repairing water-closet in Gymnasium—J. M. McNamara	5 00
One 1½-inch globe valve—J. M. McNamara	1 50
Repairing faucets and fittings—J. M. McNamara	6 00
Six joints stove-pipe—J. M. McNamara	1 80
One elbow—J. M. McNamara	30
Repairing closet—J. M. McNamara	1 50
One light pendant—J. M. McNamara	2 00
Labor for month of April	51 00
Two thousand two hundred cubic feet gas—Oakland Gas Co.	5 50
Repairing water-closet in South Hall—J. M. McNamara	2 10
Repairing leader in North Hall—J. M. McNamara	3 00
Repairing roof of Observatory—J. M. McNamara	1 50
Repairing shower in Gymnasium—J. M. McNamara	1 00
One thousand cubic feet gas—Oakland Gas Co.	2 50
Repairing door check—F. D. Morrill	2 75
Fifteen sacks sawdust—George C. Pape	3 75
Twenty-two and one half square feet wire cloth—Savage Bros.	1 80
Forty-eight pounds ¾-inch rope—J. McClain	7 68
One Yale padlock—A. Erlandsen	1 25
Six pounds paint—J. M. McNamara	60
Solder and coal—J. M. McNamara	50
One half day's labor of two men—J. M. McNamara	3 00
One pair brass hinges and screws—A. Erlandsen	10
One brass hook and eye—A. Erlandsen	05
Two brass rods—A. Erlandsen	25
Three gross screw hooks—A. Erlandsen	1 65
One pair brass hinges and screws—A. Erlandsen	25
One brass lock and two keys—A. Erlandsen	50
One hinge, hasp, and bolts—A. Erlandsen	20
One padlock and two keys—A. Erlandsen	1 00
Repairing roof to North Hall—J. M. McNamara	2 00
Bill of J. M. McNamara for repairing Gymnasium: Forty-five pounds 1½-inch lead pipe, one sewer trap, three pounds solder, two hose bibs, five inches water pipe, nine fittings, one day's labor of two men	13 00
Repairs in North Hall—J. M. McNamara	5 50
New bottom in Gymnasium tank—J. M. McNamara	12 00
Fitting three keys—A. Erlandsen	75
Three joints 5-inch stove-pipe, one elbow, one collar, and labor—J. M. McNamara	1 25
One reducer—J. M. McNamara	10
One chair casting—G. H. Fuller Desk Co.	1 00

\$6,780 29

APPENDIX No. 2 C—Administration—Advertising and Printing.

Advertising entrance examinations—San Francisco "Chronicle"	\$9 80
Advertising entrance examinations—San Francisco "Call"	8 00
Advertising entrance examinations—San Francisco "Bulletin"	11 00
Advertising entrance examinations—Los Angeles "Times-Mirror"	8 30
Advertising entrance examinations—Los Angeles "Herald"	5 00
Advertising entrance examinations—San Francisco "Alta California"	7 00
Advertising entrance examinations—Oakland "Enquirer"	4 00
Advertising entrance examinations—San Francisco "Evening Post"	6 00
Advertising entrance examinations—Los Angeles "Express"	4 75
Advertising entrance examinations—San Francisco "Report"	7 00
Advertising entrance examinations—Oakland "Tribune"	3 60
Printing 100 circulars—The Louis Roesch Co.	3 75
Advertising entrance examinations—H. S. Spaulding	4 00
Advertising entrance examinations—Chico "Chronicle"	2 50
Advertising entrance examinations—Chico "Enterprise"	3 00
Printing entrance examination questions—Bosque Engraving Co.	78 50
Advertising entrance examinations—Grass Valley "Union"	4 00
Notice special meeting of Regents—San Francisco "Call"	1 00
Five hundred demands on Controller—Dutton & Partridge	5 50
Fifty copies payroll—C. A. Murdock & Co.	11 00
Five hundred receipts printed—Dutton & Partridge	2 50
Seventy-five copies Morrill College Aid Act—H. S. Crocker & Co.	10 00
Printing 500 circulars on satin—H. S. Crocker & Co.	30 00
Printing examination papers—C. A. Murdock & Co.	43 00
Two hundred announcements (Mills Professorship)—C. A. Murdock & Co.	8 00

\$276 20

APPENDIX No. 2 D—Administration—Telegraphing and Expressage.

Expressage—Patterson & Co.	\$3 25
Exchange, etc., on warrants, bonds, etc.	25
Telegraphing—Western Union Telegraph Co.	3 37
Expressage—Wells, Fargo & Co.	16 75
Exchange, etc., on warrants, bonds, etc.	4 18
Telegraphing—Western Union Telegraph Co.	1 65
Expressage—Wells, Fargo & Co.	3 75
Telegraphing—Western Union Telegraph Co.	80
Exchange, etc., on warrants, bonds, etc.	6 09
Expressage—Wells, Fargo & Co.	7 80
Exchange on bonds, etc.	21 50
Expressage—Wells, Fargo & Co.	1 20
Telegraphing—Western Union Telegraph Co.	1 50
Expressage—Wells, Fargo & Co.	35
Exchange, collection of bonds	6 96
Expressage—Wells, Fargo & Co.	4 40
Expressage—Patterson & Co.	3 00
Moving safe from San Francisco—F. B. Belcher	50 00
Timber for safe—F. B. Belcher	1 00
Expressage—Wells, Fargo & Co.	2 70
Exchange from Sacramento—Louis Sloss, Treasurer	50 17
Exchange on bonds—Louis Sloss, Treasurer	7 93
Expressage—Wells, Fargo & Co.	4 41
Exchange on eastern drafts—Louis Sloss, Treasurer	1 70
Telegrams—Western Union Telegraph Co.	1 86
Commission on money orders—S. W. Backus	20
Exchange on remittance—Louis Sloss, Treasurer	25
Expressage—Patterson & Co.	8 60
Expressage—Wells, Fargo & Co.	6 55
Exchange on drafts—Louis Sloss, Treasurer	42
Telephone—Daggett & Co.	25
Telegram—Western Union Telegraph Co.	57
Exchange on warrants to Sacramento—Louis Sloss, Treasurer	5 31
Telegrams—Western Union Telegraph Co.	4 20
Expressage—Patterson & Co.	8 50
Expressage—Wells, Fargo & Co.	7 80
Commission on money orders—S. W. Backus	30
Commission on money orders—N. B. Byrne	67
Expressage—Patterson & Co.	3 00
Telegraphing—Western Union Telegraph Co.	5 43
Premium on Chicago draft—Anglo-Californian Bank	45
Commission on money orders—N. B. Byrne	47
Expressage—Wells, Fargo & Co.	5 95
Expressage—Wells, Fargo & Co.	13 05
Commission on money orders—N. B. Byrne	31
Exchange on drafts—Louis Sloss, Treasurer	1 00
Exchange on drafts, etc.—Louis Sloss, Treasurer	21 35
Expressage—Patterson & Co.	1 75
Telegram—Western Union Telegraph Co.	1 00
Exchange on Sacramento—Louis Sloss, Treasurer	86 26
Telegrams—Western Union Telegraph Co.	64
Expressage—Patterson & Co.	5 50
Commission on money orders—S. W. Backus	20
Commission on money orders—N. B. Byrne	64
Expressage—Wells, Fargo & Co.	4 95
Expressage—Patterson & Co.	50
Telegrams—Western Union Telegraph Co.	1 49
Expressage—Wells, Fargo & Co.	30 30
Expressage—Patterson & Co.	50
Expressage—Wells, Fargo & Co.	8 20
Commission on money orders—N. B. Byrne	20
Commission on money orders—S. W. Backus	10
Telegrams—Western Union Telegraph Co.	4 05
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	\$447 48

APPENDIX No. 2 E—Administration—Stationery.

One half dozen letter pads—Payot, Upham & Co.	\$1 00
One half dozen note pads—Payot, Upham & Co.	60
One dozen packages treasury blotter—Payot, Upham & Co.	1 75
One box pens—Payot, Upham & Co.	75
One box pens—Payot, Upham & Co.	75
One gross penholders—Payot, Upham & Co.	1 00
Four quarts ink—Payot, Upham & Co.	1 60

One half dozen note pads—Payot, Upham & Co.	\$0 38
One half dozen letter pads—Payot, Upham & Co.	75
One dozen pencils—Payot, Upham & Co.	40
One gross Dreka pens—Dutton & Partridge	90
Assorted rubber bands—Dutton & Partridge	5 00
Five balls twine—Dutton & Partridge	1 00
One third gross Dixon's pencils—Dutton & Partridge	1 50
One gross Faber's pencils—Dutton & Partridge	1 00
Four No. 10 records—Dutton & Partridge	2 40
One No. 40 records—Dutton & Partridge	1 00
Two No. 36 records—Dutton & Partridge	1 00
Three quarts ink—Dutton & Partridge	2 25
One quart crimson fluid—Dutton & Partridge	75
One 32-ounce aniline—Dutton & Partridge	1 25
One quart mucilage—Dutton & Partridge	1 00
Three dozen document envelopes—Dutton & Partridge	1 95
Two San Francisco directories—Dutton & Partridge	10 00
One office diary—Payot, Upham & Co.	1 50
One sixth dozen office baskets—Walter Meese	\$2 30
Less 25 per cent.	55
Six boxes rubber bands—J. J. Evans	\$3 80
Less	80
	3 00
One basket—Wing Chung Lung	85
Bishop's A B C Guide—two copies, one year	5 00
One record book—Dutton & Partridge	1 75
One quarter ream journal paper—Dutton & Partridge	1 80
Four boxes paper fasteners—Dutton & Partridge	1 00
One cloth record—W. B. Hardy	1 80
Wrapping paper—H. S. Crocker & Co.	1 00
One half ream journal paper—Dutton & Partridge	3 60
One ream foolscap paper—Dutton & Partridge	3 50
Six quarts Underwood's ink—Dutton & Partridge	2 75
Two diaries—E. P. Bancroft	3 65
One dozen inkstands—Payot, Upham & Co.	4 60
Four waste baskets—Payot, Upham & Co.	3 00
Two quires treasury blotting paper—H. S. Crocker & Co.	4 00
One and one fifth thousand flat head fasteners—H. S. Crocker & Co.	3 00
Three dozen pencils—H. S. Crocker & Co.	1 00
One half dozen letter files—H. S. Crocker & Co.	3 20
One sixth dozen crimson ink—H. S. Crocker & Co.	2 00
One gross rubber bands—H. S. Crocker & Co.	4 50
One copy brush—H. S. Crocker & Co.	40
One ream legal cap—H. S. Crocker & Co.	3 50
Two copy books—H. S. Crocker & Co.	2 60
One banker's outfit—A. S. Barnes & Co.	5 00
Five requisition books—H. S. Crocker & Co.	15 00
One ledger—H. S. Crocker & Co.	2 60
One cash book—H. S. Crocker & Co.	2 60
One journal—H. S. Crocker & Co.	2 60
Lettering same—H. S. Crocker & Co.	1 00
One diary—The Bancroft Co.	1 50
One box pens—Dutton & Partridge	75
Four quires Manila paper—H. S. Crocker & Co.	1 00
One box pens—Dutton & Partridge	1 00

\$147 78

APPENDIX No. 2 F—Administration—Postage.

Postage stamps—N. B. Byrne	\$50 00
Postage stamps—N. B. Byrne	80 00
Postage stamps—N. B. Byrne	25 00
Five hundred postal cards—N. B. Byrne	5 00
Postage stamps—N. B. Byrne	65 00
Twenty-five 1-cent wrappers—N. B. Byrne	25
Postage stamps—N. B. Byrne	210 00
Postage stamps—N. B. Byrne	88 90
Postage stamps—N. B. Byrne	40 10

\$564 25

APPENDIX No. 2 G—Administration—Land Administration.

Sheriff's fees, serving delinquent notices—J. B. Mhoon	\$5 50
Sheriff's fees, serving delinquent notices—J. B. Mhoon	5 10
Shorthand dictation, Burke vs. The Regents—Miss M. G. Barrett	4 20

Commission on money order—N. B. Byrne.....	\$0 05
Clerical services—Register and Receiver, Marysville.....	6 00
Commission on money order—N. B. Byrne.....	05
Commission on money order—N. B. Byrne.....	21
Printing 100 lists of land for sale—C. A. Murdock & Co.,.....	8 00
Commission on money order—N. B. Byrne.....	05

\$29 16

APPENDIX No. 2 H—Administration—Incidental Expenses.

Renewal of Secretary's bond—Pacific Surety Co.	\$50 00
Renewal of Assistant Secretary's bond—Pacific Surety Co.	50 00
Rent of room for Regents—G. Lambert, Agent.....	30 00
Clerical work—W. C. Allen.....	21 75
Clerical work—W. C. Allen.....	12 45
Rent of Regents' room, August and September—G. Lambert, Agent.....	60 00
Services of Janitor for Regents' room, August and July.....	8 00
Copying answer, Bulkeley, Exr., vs. Regents—Runge & Elliot.....	60
Copying letters to Treasurer and Secretary of State—Runge & Elliot.....	1 10
Clerical services—W. C. Allen.....	4 10
Rent of Regents' room, October and November—G. Lambert, Agent.....	60 00
Janitor of Regents' room, September and October—G. Lambert, Agent.....	8 00
Answer in case Burke vs. Regents—Matt. Clarken.....	50
Rent of Regents' room—G. Lambert, Agent.....	30 00
Janitor's services, Regents' room—G. Lambert, Agent.....	4 00
Janitor's services, Regents' room, January and February—G. Lambert, Agent.....	8 00
Rent of Regents' room, January and February—G. Lambert, Agent.....	60 00
Rubber stamp—C. A. Klinkner & Co.....	50
Rent of Regents' room—G. Lambert, Agent.....	30 00
Janitor's services, Regents' room, February—G. Lambert, Agent.....	4 00
Rent of Regents' room for April—G. Lambert, Agent.....	30 00
Janitor's services, Regents' room, for April—G. Lambert, Agent.....	4 00
One stamp—C. A. Klinkner & Co.....	25
Acknowledgments of Secretary—J. R. Little.....	1 00
Rent of Regents' room for May—G. Lambert, Agent.....	30 00
Janitor's services, Regents' room, for May—G. Lambert, Agent.....	4 00
Notary Public fees for release of Huffman mortgage—J. W. Cook.....	1 00
Funeral expenses of Prof. John Le Conte—Albert Brown.....	382 00
Rent of Regents' room for June—G. Lambert, Agent.....	30 00
Janitor's services, Regents' room, for June—G. Lambert, Agent.....	4 00
One stamp—C. A. Klinkner & Co.....	50
Two stamps—L. E. Alexander & Co.....	1 00
Clerical service in Recorder's office—Miss S. M. Hardy.....	12 00
Clerical service in Recorder's office—C. H. Bentley.....	13 00

\$955 75

APPENDIX No. 2 I—Administration—College Celebrations.

Music for Commencement—Fifth Artillery Regiment Band.....	\$125 00
Night work—A. Edgar.....	4 00
Night work—James Tait.....	4 00
Four pieces ribbon for diplomas—O'Connor, Moffatt & Co.....	9 60
Writing diplomas—T. R. Southern.....	23 50
Carriage hire—H. M. Waterbury.....	11 00
One piece ribbon—Kohlberg, Strauss & Frohman.....	2 75
Twelve pieces gilt-edge ribbon—Schweitzer & Co.....	24 00
Music on Charter Day—Noah Brandt's Orchestra.....	41 50
Three hundred and fifty dance cards—Brunt & Co.....	8 50
Five small ribbon bows—Brunt & Co.....	
Fifty diplomas on parchment—Schmidt Label Co.....	75 00
Engrossing fifty-four diplomas—T. R. Southern.....	27 00
Stationery, engraving, printing, etc.—Jos. W. Flynn.....	45 70

\$401 55

APPENDIX No. 2 J—Administration—Official and Lecturing Expenses.

Traveling expenses of Professor Putzker.....	\$67 30
Traveling expenses of Professor Stringham.....	3 75
Traveling expenses of M. E. Letts.....	6 65
Traveling expenses of Secretary.....	14 45
Traveling expenses of J. D. Layman.....	22 90
Traveling expenses of J. H. Gray, Jr.....	27 25
Traveling expenses of Professor Greene.....	23 25
Traveling expenses of J. B. Clarke.....	19 70
Traveling expenses of M. E. Letts.....	4 55
Traveling expenses of Assistant Secretary.....	4 50

Traveling expenses of M. E. Letts	\$7 20
Traveling expenses of M. E. Letts	4 55
Traveling expenses of M. E. Letts	6 10
Traveling expenses of J. P. Baudin	3 75
Traveling expenses of Frederick Iddins	70
Traveling expenses of J. H. C. Bonté, Secretary, July to December	32 20
Traveling expenses of W. A. McKowen	10 45
Traveling expenses of W. H. Phipps	65
Traveling expenses of M. E. Letts, for November	5 90
Traveling expenses of M. E. Letts, for December	6 40
Traveling expenses of W. H. Phipps	25
Traveling expenses of W. C. Jones	39 20
Traveling expenses of J. H. C. Bonté, Secretary	3 55
Traveling expenses of F. Slate	5 15
Traveling expenses of F. Slate	81 90
Traveling expenses of Irving Stringham	82 75
Traveling expenses of M. E. Letts	6 05
Traveling expenses of Frederick Iddins	20
Traveling expenses of M. E. Letts	5 45
Traveling expenses of W. C. Jones	60 70
Traveling expenses of M. E. Letts, for March	5 35
Traveling expenses of W. A. McKowen	6 30
Traveling expenses of Thomas R. Bacon	92 55
Traveling expenses of C. M. Gayley	97 70
Traveling expenses of A. F. Lange	43 30
Traveling expenses of G. C. Edwards	38 05
Traveling expenses of G. M. Richardson	82 15
Traveling expenses of Thos. R. Bacon	12 75
Traveling expenses of C. M. Gayley	18 80
Traveling expenses of F. Slate	45 50
Traveling expenses of F. Slate	13 60
Traveling expenses of J. H. C. Bonté, Secretary	4 50
Traveling expenses of M. W. Haskell	26 70
Traveling expenses of Isaac Flag	21 25
Traveling expenses of M. E. Letts	5 70
Traveling expenses of M. E. Letts	5 60
Traveling expenses of Frederick Iddins	75
Traveling expenses of F. Slate	9 40
Traveling expenses of J. H. C. Bonté, Secretary	6 55
Traveling expenses of W. H. Phipps	85
Traveling expenses of A. F. Lange	1 50
Traveling expenses of G. C. Edwards	2 25
Traveling expenses of F. Slate	11 50
Traveling expenses of C. M. Gayley	3 50

\$1,113 30

APPENDIX No. 2 K—Administration—Cottage Repairs.

Night work—A. Edgar	\$4 00
Night work—R. Forbes	4 00
Night work—J. Davis	4 00
Night work—P. Gillick	3 00
Painting—D. W. Lowe	5 75
Painting—George C. Gottung	11 00
Repairing boiler—J. M. McNamara	3 00
Repairing sink—J. M. McNamara	3 50
Repairing sewer—J. M. McNamara	3 00
Labor on Long cottage—J. M. McNamara	2 35
Four $\frac{3}{4}$ -inch faucets—J. M. McNamara	4 00
Repairing four faucets—J. M. McNamara	1 00
Repairing waste pipe—J. M. McNamara	2 50
Repairing roof of North Hall—J. M. McNamara	1 00
Charcoal for North Hall—J. M. McNamara	75
Labor on North Hall—J. M. McNamara	4 00
Repairing boiler connections—J. M. McNamara	75
Charcoal—J. M. McNamara	25
Repairing faucet—J. M. McNamara	25
One door—Niehaus Bros. & Co.	44 00
Sixteen feet threshold—Niehaus Bros. & Co.	
One hundred feet casing—Niehaus Bros. & Co.	
One set door jambs—Niehaus Bros. & Co.	
One lock and hinge—Niehaus Bros. & Co.	
One hundred feet 1x4 flooring—Niehaus Bros. & Co.	
Two hundred feet $\frac{3}{4}$ round—Niehaus Bros. & Co.	7 00
One chimney top—J. M. McNamara	
Light pendants—J. M. McNamara	

Repairing boiler in Gompertz cottage—J. M. McNamara	\$1 00
New connections in Long cottage—J. M. McNamara	2 50
Painting—James Andrews	12 00
Plumber's repairs—J. M. McNamara	3 00
Painting cottage—James Andrews	70 00
Repairing boiler connection—J. M. McNamara	3 00
Repairing chimney stack—J. M. McNamara	3 00
Three keys fitted—A. Erlandsen	75
One mortise lock—A. Erlandsen	50
Four pairs plated door knobs—A. Erlandsen	1 25
Repairing bath, etc.—J. M. McNamara	1 50
One chimney top, eight feet high—J. M. McNamara	7 00
Lining sink—J. M. McNamara	4 50
Repairing water-closet in Gompertz cottage—J. M. McNamara	2 50
Bill of J. M. McNamara for repairing Jackson cottage:	
Eight pounds lead pipe	\$0 80
Three pounds solder	75
One boiler coupling	35
One chimney top, labor, and wire	7 00
Three hours' labor, two men	1 50
	10 40
Painting in cottages—James Andrew	15 00

\$253 00

APPENDIX No. 2 L—Administration—Insurance.

Insurance—J. C. Mitchell & Son	\$84 60
Insurance on two cottages—J. C. Mitchell & Son	24 00
Insurance on Chemical Laboratory—J. C. Mitchell & Son	375 00
Insurance on Chemical Laboratory—J. C. Mitchell & Son	90 00
Insurance on Lick Observatory—J. C. Mitchell & Son	210 75

\$784 35

APPENDIX No. 2 M—Administration—Water Supply.

Prospecting for water—H. Linderman	\$461 00
Labor for month of June	2 00
Prospecting for water—H. Linderman	290 00
Twenty-two feet 6-inch pipe—H. Linderman	6 60
Labor for month of July	2 00
Labor for month of August	2 00
Prospecting for water—H. Linderman	242 40
Labor for month of September	2 00
Labor for month of October	2 00
Labor for month of November	2 00
Advertisement for bids—San Francisco "Chronicle"	28 00
Advertisement for bids—San Francisco "Bulletin"	12 00
Labor for month of December	2 00
Labor for month of January	2 00
Work on tunnel contract—W. C. Giles	100 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of February	2 00
Work on tunnel contract—W. C. Giles	100 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of March	2 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of April	2 00
Final payment on tunnel contract—W. C. Giles	612 50
Sinking a well twenty-five feet deep—H. Linderman	50 00
Timbering twenty-two feet—H. Linderman	11 00
Two days' labor—H. Linderman	10 00

\$2,245 50

APPENDIX No. 3 A—Agricultural Experiment Stations—Buildings.

One hundred and fifty brick, Paso Robles Station—Elliot Brick Co.	\$1 50
One barrel lime, Paso Robles Station—Salinas Valley Lumber Co.	2 25
Four feet redwood, Paso Robles Station—Salinas Valley Lumber Co.	20
Remodeling chimney, Paso Robles Station—A. E. Johnson	10 00
Painting house outside, Paso Robles Station—I. F. Bakestow	67 00
Graining house inside, Paso Robles Station—I. F. Bakestow	37 00
Painting, etc., house inside, Paso Robles Station—I. F. Bakestow	14 00
Painting tank and trestle, Paso Robles Station—I. F. Bakestow	15 00
Painting barn and roof, Paso Robles Station—I. F. Bakestow	12 00

\$158 95

APPENDIX No. 3 B—*Agricultural Experiment Stations—Chemical Apparatus and Supplies.*

Two rose crucibles—Justinian Caire.....	\$1 50
Rubber tubing—Justinian Caire.....	50
Two hundred and fifty-three pounds sal soda—Justinian Caire	4 44
Six tin plates—Justinian Caire	30
Strychnine—Justinian Caire	85
Paraffine—Justinian Caire	40
Ten pounds caustic potash—Justinian Caire	8 00
Ten feet tin pipe—Justinian Caire	1 50
Two pounds chloride of calcium—Justinian Caire.....	1 50
Washed filter paper—Justinian Caire	25 00
Four V tubes—Justinian Caire	1 00
Twenty-five pounds copper sulphate—Justinian Caire	2 25
Clamps and wood stand—Justinian Caire	6 50
Corks—Justinian Caire	5 00
Two files—Justinian Caire	80
Tincture press—Justinian Caire	6 75
Three carboys—Justinian Caire	6 75
Rubber tubing—Justinian Caire	10 00
Two small oil cans—Justinian Caire	50
Sheet rubber—Justinian Caire	1 50
Rubber corks—Justinian Caire	00
One set pliers—Justinian Caire	2 00
One set hornspsoons—Justinian Caire	50
One set cork borers—Justinian Caire	2 70
One thermometer—Justinian Caire	2 50
One cutting shear—Justinian Caire	1 50
Four burners, iron bottom—Justinian Caire	5 00
Two filter stands—Justinian Caire	2 50
One Fletcher gas burner—Justinian Caire	1 75
One half dozen Ord. B. B. gas—Justinian Caire	3 50
One half dozen test tube racks—Justinian Caire	4 50
Two sets casseroles—Justinian Caire	7 50
Assorted porcelain dishes—Justinian Caire	14 00
One hundred and forty-nine pounds nitric acid—Justinian Caire.....	11 92
One hundred and nineteen pounds muriatic acid—Justinian Caire.....	4 16
Two hundred pounds sulphuric acid—Justinian Caire	5 00
One platinum dish—Justinian Caire	\$45 50
One platinum dish—Justinian Caire	29 50
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	\$75 00
Discount	58
	<hr/>
	74 42
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	\$231 49

APPENDIX No. 3 C—*Agricultural Experiment Stations—Freight and Expressage.*

Freight and expressage, Amador Station—Geo. Hansen.....	\$6 40
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APPENDIX No. 3 D—*Agricultural Experiment Stations—Incidental Expenses.*

Pump back, Amador Station—Geo. Hansen.....	\$3 15
Tallow, Amador Station—Geo. Hansen	50
Telegrams, Amador Station—Geo. Hansen	3 10
Putting up water trough—Cox & Williams	6 00
Staples—Cox & Williams.....	75
Sharpening two picks—Cox & Williams	50
One bolt—Cox & Williams	10
Twenty-three feet 1-inch and 1½-inch pipe—Julius Forrer	2 40
Brass strainer—Julius Forrer.....	25
Work of plumber—Julius Forrer	50
Eight new horseshoes—Julius Forrer.....	4 00
Labor on sled—Julius Forrer	75
Freight on fanning mill—Julius Forrer.....	1 35
Express charges on sacks—Julius Forrer	1 00
Two cans axle grease—Julius Forrer.....	50
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	\$24 85

APPENDIX No. 3 E—*Agricultural Experiment Stations—Labor.*

Payroll for June, 1890—Amador Station.....	\$154 05
Payroll for June, 1890—Amador Station	16 15
Payroll for June, 1890—Paso Robles Station.....	86 50

Payroll for June, 1890	\$20 00
Payroll for June, 1890—Tulare Station	1 46
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	\$422 70

APPENDIX No. 3 F—*Agricultural Experiment Stations—Postage and Stationery.*

Postage, Amador Station—Geo. Hansen	\$1 00
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APPENDIX No. 3 G—*Agricultural Experiment Stations—Supplies.*

Thirty feet T. and G. redwood—San Joaquin Lumber Co.	\$1 35
Fourteen feet surfaced redwood—San Joaquin Lumber Co.	63
Seventeen feet surfaced redwood—San Joaquin Lumber Co.	68
Eighty-nine feet redwood—San Joaquin Lumber Co.	2 67
Thirty-two feet clear pine	1 60
Two empty barrels—S. Goldman & Co.	4 00
Twenty-four pounds iron—S. Goldman & Co.	1 44
Screws	10
Ball twine	25
Bill of C. Reinwald for books (93.35 francs)	18 30
Two volumes Agricultural Science—Hunt & Eaton	5 50
Postage on same—Hunt & Eaton	30
One volume Quantitative Analyses—Hunt & Eaton	68
Postage on same—Hunt & Eaton	12
One thousand seven hundred and five pounds hay—Geo. H. Rinehart & Bros.	21 30
One hundred and eighty pounds barley—E. Ginocchio & Bro.	3 15
Railroad charges and teaming—E. Ginocchio & Bro.	12 54
Expressage—E. Ginocchio & Bro.	90
Lard oil—E. Ginocchio & Bro.	1 00
Chain—E. Ginocchio & Bro.	40
Lock—E. Ginocchio & Bro.	75
Seven and one half pounds babbitt metal—E. Ginocchio & Bro.	90
Emory—E. Ginocchio & Bro.	50
Rubber packing—E. Ginocchio & Bro.	50
Nails—E. Ginocchio & Bro.	50
One belt punch—E. Ginocchio & Bro.	25
Sixty-three pounds bran—E. Ginocchio & Bro.	94
Fifty paper bags—E. Ginocchio & Bro.	50
Four pounds babbitt metal—E. Ginocchio & Bro.	50
One hundred and sixty-five pounds barley—E. Ginocchio & Bro.	2 47
One hoe—E. Ginocchio & Bro.	50
Twenty-four pounds nails—E. Ginocchio & Bro.	1 20
Five gallons fire-proof paint—J. M. Levy	6 25
Iron rod—J. M. Levy	45
Twenty-five pounds white lead—J. M. Levy	1 75
One hundred and seventy-five pounds barley—J. M. Levy	3 07
Paint brushes—J. M. Levy	1 25
Seventy-five pounds spikes—J. M. Levy	2 75
Ten pounds nails—J. M. Levy	50
Six hundred and sixty feet lumber—L. Newman & Co.	9 90
One thousand one hundred and thirty-six feet lumber—L. Newman & Co.	25 56
Three tons barley hay—R. D. Cruickshank	18 00
Two tons barley hay—R. D. Cruickshank	12 00
Five gallons kerosene—George F. Bell	1 75
Five cans squirrel poison—George F. Bell	2 00
One thousand and ten pounds ground barley—George F. Bell	10 60
Beeswax—George F. Bell	20
Castor oil—George F. Bell	75
Rosin—George F. Bell	10
Ink—George F. Bell	10
Tallow—George F. Bell	20
Bill of Henry W. Taylor:	
Two hundred and thirty-four feet lumber	\$4 68
One thousand feet selected redwood	25 00
Mill work	4 00
Cartage	50
	<hr/>
	\$34 18

Discount

18

One Prescott Prox Annual—D. Van Nostrand Co.	34 00
Postage on same—D. Van Nostrand Co.	1 23

08

\$218 91

APPENDIX No. 3 H—*Agricultural Experiment Stations—Scientific Instruments.*

Bill of Charles C. Riedy:		
One Bausch & Lomb universal stand, with A and C eyepieces.....	\$59 00	
One Bausch & Lomb professional objective, $\frac{1}{2}$ -inch.....	30 00	
One Bausch & Lomb professional objective, $\frac{3}{4}$ -inch.....	18 00	
One Bausch & Lomb professional objective, 1-inch.....	15 00	
One Bausch & Lomb professional objective, 2-inch.....	13 00	
	<u>\$135 00</u>	
Less 10 per cent	13 60	
		<u>\$121 40</u>

APPENDIX No. 3 I—*Agricultural Experiment Stations—Traveling Expenses.*

Traveling expenses, May and June, 1889—W. G. Klee.....	\$42 50
Traveling expenses, June, 1889—E. W. Hilgard	41 20
Twenty second-hand sacks—W. G. Klee	80
	<u>\$84 50</u>

APPENDIX No. 3 J—*Agricultural Experiment Stations—Water Supply.*

One hundred and fifty feet extra hose—Woodin & Little	\$36 00
Three sets couplings—Woodin & Little.....	1 50
Six bands—Woodin & Little.....	75
Cartage on same—Woodin & Little	35
New lining to cylinder—Woodin & Little.....	7 50
Four 6-inch leathers—Woodin & Little	2 00
Thirty-three feet 4-ply rubber belt—Woodin & Little.....	\$7 92
Less 10 per cent	79
	<u>7 13</u>
One 2-inch Y—Woodin & Little	1 00
One $1\frac{1}{2}$ -inch bend—Woodin & Little.....	1 10
Fifty-one $\frac{1}{2}$ -inch ells—Woodin & Little.....	75
Four tees—Woodin & Little	1 20
Eighteen plugs—Woodin & Little	82
Seven hundred and eighty feet 2-inch pipe—Woodin & Little.....	1 17
One hundred and eighty feet $1\frac{1}{2}$ -inch pipe—Woodin & Little.....	21 15
Three fig—Woodin & Little.....	5 40
One 2-inch tee—Woodin & Little.....	40
Two 1-inch service cocks—Woodin & Little	1 50
One $\frac{1}{2}$ -inch bibb—Woodin & Little.....	85
One reducer—Woodin & Little	10
Six 2-inch tees—Woodin & Little	2 10
Twelve 2-inch nipples—Woodin & Little	1 65
Three 2-inch caps—Woodin & Little	50
Nine feet pipe, and cutting and fitting—Woodin & Little	2 69
Three bushings—Woodin & Little.....	45
Three nipples—Woodin & Little	30
Four 1-inch garden valves—Woodin & Little.....	4 00
One 2-inch union—Woodin & Little	45
Two 2-inch ells—Woodin & Little.....	50
Three 1-inch ells—Woodin & Little	20
Two 2-inch sockets—Woodin & Little	50
One 2-inch wrought bend—Woodin & Little	1 50
Two $1\frac{1}{2}$ -inch ells—Woodin & Little	35
Four 1-inch tees—Woodin & Little.....	60
Packing and cartage on same—Woodin & Little.....	2 00
	<u>\$224 09</u>

APPENDIX No. 3 K—*Agricultural Experiment Stations—Labor.*

Labor for month of July	\$54 00
Payroll for month of July, Paso Robles Station.....	93 42
Payroll for month of July, Amador Station.....	128 60
Payroll for month of July, Tulare Station.....	88 00
Labor for month of August.....	24 00
Payroll for month of August, Paso Robles Station.....	44 98
Payroll for month of August, Tulare Station.....	33 00
Payroll for month of August, Amador Station	100 15
Labor for month of September.....	34 00
Payroll for month of September, Paso Robles Station	62 30
Payroll for month of September, Tulare Station	34 00
Payroll for month of September, Amador Station.....	110 55
Labor for month of October	188 40
Payroll for month of October, Paso Robles Station.....	91 71

Payroll for month of October, Tulare Station	\$54 00
Labor, picking grapes—Isidor Le Duc	26 25
Labor—Isidor Le Duc	7 50
Payroll for month of November, Paso Robles Station	129 75
Payroll for month of October, Amador Station	110 20
Labor for month of November	100 00
Payroll for month of November, Amador Station	105 30
Payroll for month of November, Tulare Station	50 00
Payroll for month of December, Tulare Station	50
Payroll for month of December, Paso Robles Station	86 54
Labor for month of December	66 00
Payroll for month of December, South California Station	94 00
Labor—Isidor Le Duc	2 60
Payroll for month of January, Tulare Station	75 00
Labor for month of January	54 00
Payroll for month of December, Amador Station	107 15
Payroll for January, Pomona Station	251 00
Payroll for January, Amador Station	106 80
Payroll for January, Paso Robles Station	83 04
Payroll for February, Tulare Station	92 00
Payroll for February, Paso Robles Station	83 04
Payroll for February, Amador Station	83 60
Labor for February	48 00
Payroll for month of February, Pomona Station	100 00
Labor for month of March	52 00
Payroll for month of March, Tulare Station	108 00
Payroll for month of March, Amador Station	89 30
Payroll for month of March, Paso Robles Station	108 84
Payroll for month of March, South California Station	100 00
Labor for month of April	52
Payroll for month of April, South California Station	156 00
Payroll for month of April, Paso Robles Station	135 00
Payroll for month of April, Amador Station	100 15
Payroll for month of April, Tulare Station	91 00
Two days' labor—R. P. Hill	3 50
Payroll for month of May, Tulare Station	98 00
Payroll for month of May, Paso Robles Station	84 77
Payroll for month of May, South California Station	102 00
Labor for month of May	52 00
Payroll for month of May, Amador Station	101 70

\$4,477 14

APPENDIX No. 3 L—Agricultural Experiment Stations—Buildings.

One hundred and twenty-two feet redwood—Salinas Valley Lumber Co.	\$3 14
Ninety-six feet pine—Salinas Valley Lumber Co.	3 17
Three hundred shakes—Salinas Valley Lumber Co.	5 10
Fifty feet molding—Salinas Valley Lumber Co.	50
Galvanized vent tubes to gas stoves—John J. Menges	9 00
One thousand five hundred and sixty-one feet redwood and Oregon pine—O. J. Brown	42 92
Repairing sink—T. C. Jameson	2 50

\$66 33

APPENDIX No. 3 M—Agricultural Experiment Stations—Chemical Apparatus and Supplies.

Seventy-eight pounds sal soda—Justinian Caire	\$1 86
Corrosive sublimate—Justinian Caire	1 00
Four pounds chromic acid—Justinian Caire	1 20
One pound Mg. carbonate—Justinian Caire	1 80
Three pounds Mg. oxide—Justinian Caire	3 00
Ten pounds black oxide manganese—Justinian Caire	90
Three pounds ether—Justinian Caire	2 40
Three pounds chloroform—Justinian Caire	2 40
Acetic acid—Justinian Caire	2 00
One pound molybdic acid—Justinian Caire	2 25
Five pounds ammonium nitrate—Justinian Caire	1 60
Two pounds liver of sulphur—Justinian Caire	90
Potassium nitrate—Justinian Caire	55
Zinc dust—Justinian Caire	2 00
Ammonium citrate—Justinian Caire	1 00
Five pounds bar zinc—Justinian Caire	1 10
Two pounds ferrous sulphate—Justinian Caire	65
One fourth pound ferric sulphate—Justinian Caire	50
Ferric chloride, pure—Justinian Caire	50

Two pounds ammonium carbonate—Justinian Caire.....	\$1 10
One pound potassium chloride—Justinian Caire	85
One pound potassium chlorate—Justinian Caire	90
One pound potassium permanganese, pure—Justinian Caire.....	1 25
One pound potassium phosphate—Justinian Caire.....	1 60

\$32 61

APPENDIX No. 8 N—*Agricultural Experiment Stations—Furniture.*

Repairing stove front—A. Erlandsen.....	\$0 75
One oak office table—West Coast Manufacturing Co.....	10 00
One oak cylinder desk—West Coast Manufacturing Co.....	22 50
Five perforated-seat chairs—West Coast Manufacturing Co.....	8 75
One cane-seat chair—West Coast Manufacturing Co.....	4 50
One oak library table—West Coast Furniture Co.....	10 00
One oak cylinder desk—West Coast Furniture Co.....	22 50
Five office chairs—West Coast Furniture Co.....	8 75
One screw and spring office chair—West Coast Furniture Co.....	4 50
One window shade—E. Hook.....	1 00

\$93 25

APPENDIX No. 3 O—*Agricultural Experiment Stations—Fencing and Drainage.*

Survey of McKey and Italian tract—B. Ross.....	\$20 00
Thirty pieces 1x12x14 redwood—San Joaquin Lumber Co.....	12 60
Three hundred and thirteen feet redwood—San Joaquin Lumber Co.....	9 39
Eight thousand six hundred and ninety feet wire netting—Ira F. White & Son.....	66 00
One thousand eight hundred and fifty-six feet redwood lumber—O. J. Brown.....	51 00
Ten pounds wire netting staples—Ira F. White & Son.....	1 80
Four rolls 3-foot wire netting—Ira F. White & Son.....	13 50

\$174 29

APPENDIX No. 3 P—*Agricultural Experiment Stations—Freight and Expressage.*

Expressage—Wells, Fargo & Co.....	\$1 25
Freight on plaster from Bakersfield—Southern Pacific Co.....	6 08
Freight on goods to Jackson—Woodin & Little.....	10 55
Expenses tending grain exhibit—George Hansen.....	1 75
Expressage on pump—George Hansen.....	1 80
Hauling grapes to Ione—George Hansen.....	1 25
Hauling grapes to Mountain View—J. H. McComb.....	36 00
Freight charges, Oakland to Tulare—Southern Pacific Co.....	6 80
Hauling grapes—Isidor Le Duc.....	4 00
Hauling grapes—Isidor Le Duc.....	1 50

\$70 78

APPENDIX No. 3 Q—*Agricultural Experiment Stations—Incidental Expenses.*

Contribution toward defraying expenses of Executive Committee of the Association of Agricultural Colleges and Experiment Stations at Washington during first year—H. P. Armsby.....	\$25 00
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Bill of Vilmorin Andrieux, in francs; total in dollars and cents:		
Thirty egg plants, white.....	Francs	1.80
One hundred Guizotia oleifera.....		.25
One paper vegetable seeds.....		.40
One paper vegetable seeds.....		.50
Four papers vegetable seeds.....		2.40
One paper vegetable seeds.....		1.00
Nine papers flower seeds.....		19.80
Bag, postage, and registration.....		.75

	Francs	26.90	
Repairing light wagon—Clark Elliott.....			5 32
Twelve new shoes—Clark Elliott.....			4 25
Setting four tires—Clark Elliott.....			5 25
One singletree—Bennett, Shackelford & LeBlanc.....			4 00
Lap links—Bennett, Shackelford & LeBlanc.....			60
Bolt—Bennett, Shackelford & LeBlanc.....			20
Screen wire—Bennett, Shackelford & LeBlanc.....			10
One vineyard hook—Bennett, Shackelford & LeBlanc.....			40
One vineyard hook—Bennett, Shackelford & LeBlanc.....			90
One pair hinges—Bennett, Shackelford & LeBlanc.....			15
Repairs—Bennett, Shackelford & LeBlanc.....			30
Two and one quarter pounds nails—Bennett, Shackelford & LeBlanc.....			15
One pair gate hinges—Bennett, Shackelford & LeBlanc.....			30
Six gopher traps—Bennett, Shackelford & LeBlanc.....			1 35

Hinge and nails—Bennett, Shackelford & LeBlanc.....	\$0 45
Eight shoes reset—A. Young.....	3 00
Four tires reset—A. Young.....	4 00
New shaft in wagon—A. Young.....	2 50
Repairing harness—Julius Forrer.....	1 00
Lock for stable—Julius Forrer.....	.75
Medicine for horses—Julius Forrer.....	2 00
Freight on canvas from San Francisco—Julius Forrer.....	2 25
One bottle oil—Julius Forrer.....	50
Five days' board, Mr. Klee—Margherita Vineyard.....	5 00
Five days' board, Mr. Paparelli—Margherita Vineyard.....	5 00
Hauling grapes to Fresno—Margherita Vineyard.....	2 00
Three and one half days' board, Mr. Bioletti—Margherita Vineyard.....	3 50
Help, picking grapes, three days—Margherita Vineyard.....	4 50
Hauling grapes to Fresno—Margherita Vineyard.....	6 00
Nine hundred pounds grapes—Margherita Vineyard.....	6 75
Expenses of exhibit at County Fair—Geo. Hansen.....	5 00
Expenses of exhibit at County Fair—R. D. Cruickshank.....	13 65
Six new shoes and two reset, Tulare Station—A. Young.....	3 75
One plow pointed, Tulare Station—A. Young.....	1 00
One plow pointed, Tulare Station—A. Young.....	1 00
Work on mill—T. C. Jameson.....	2 00
One can carriage paint—T. C. Jameson.....	1 00
One quart measure—T. C. Jameson.....	15
Horse medicine—Julius Forrer.....	2 00
Labor unloading date palms—Julius Forrer.....	1 00
Sawing boards—Julius Forrer.....	1 00
Bluestone—Julius Forrer.....	25
Repairing kingbolt—Geo. Hansen.....	1 00
Feeding horse—Geo. Hansen.....	50
Wire cloth—E. Ginocchio & Bro.....	50
Coal oil—E. Ginocchio & Bro.....	1 50
Chimney—E. Ginocchio & Bro.....	25
Mat—E. Ginocchio & Bro.....	75
Wrench—E. Ginocchio & Bro.....	1 50
Twine—E. Ginocchio & Bro.....	25
Forty pounds iron wire—E. Ginocchio & Bro.....	1 80
Eighty-five pounds barley—E. Ginocchio & Bro.....	1 48
Nails—E. Ginocchio & Bro.....	50
One dozen hooks—J. M. Levy.....	25
Paper bags—J. M. Levy.....	25
Screws—J. M. Levy.....	50
Paper bags—J. M. Levy.....	25
Hinges and paper bags—J. M. Levy.....	1 00
Repairing keg—Cox & Williams.....	25
Shoe—Cox & Williams.....	50
Hooks—Cox & Williams.....	1 00
Two picks sharpened—Cox & Williams.....	50
Repairing wagon—Cox & Williams.....	1 00
One can oak graining—Hewitt Bros.....	25
One tee and bushing—Hewitt Bros.....	40
Hose fittings—Hewitt Bros.....	70
One hoe—Hewitt Bros.....	50
Tallow—Hewitt Bros.....	75
Beeswax and rosin—Hewitt Bros.....	85
Filing saw—Hewitt Bros.....	25
Seven shoes—Cox & Williams.....	3 50
Abstract of title to Amador Station—Fontenrose & Spagnoli.....	20 00
One demijohn—Julius Forrer.....	1 00
Two horse brushes—Julius Forrer.....	1 00
Ten pounds nails—Julius Forrer.....	50
Filing saw—Julius Forrer.....	25
Ripping boards—Julius Forrer.....	80
Keeping dog, January and February, Amador Station—George Hansen.....	3 00
Postage—George Hansen.....	55
Telegrams—George Hansen.....	70
One box wedged—George Hansen.....	1 00
One pair woolen gloves—R. J. Beeby.....	25
Two hundred slips, "Sweet Wine Investigation"—Dewey & Co.....	1 50
Putting up horses—George Hansen.....	50
Keeping dog at barn—George Hansen.....	1 50
Two shoes—Cox & Williams.....	1 00
Postage and material used in correspondence with stations and University from date of establishment of station at Paso Robles to January 1, 1891—J. V. Webster.....	10 00

Insurance premium, Tulare Station—J. C. Mitchell & Son	\$18 00
Keeping dog—George Hansen	1 50
Membership Association American Agricultural Colleges	10 00

\$225 06APPENDIX No. 3 R—*Agricultural Experiment Stations—Postage and Stationery.*

One thousand one hundred and thirty postage stamps—N. B. Byrne	\$25 00
Postage—George Hansen	50
Fifty sheets double medium ruled paper—Edward Denny & Co.	2 75
One half dozen pads—J. J. Evans	50
One dozen counter blanks—J. J. Evans	1 00
One dozen exercise blanks—J. J. Evans	1 00
Two bottles ink—C. Beach	50
One bottle mucilage—C. Beach	1 25

\$32 50APPENDIX No. 3 S—*Agricultural Experiment Stations—Printing.*

Five thousand bulletins—Dewey & Co.	\$22 50
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APPENDIX No. 3 T—*Agricultural Experiment Stations—Supplies.*

One sail cover—L. Foard	\$12 16
Three and one quarter tons hay, Paso Robles Station—Thomas Huey	29 25
Three papers pins—Geo. F. Bell	25
Wax—Geo. F. Bell	20
Chimney—Geo. F. Bell	20
Three pounds twine—Geo. F. Bell	1 05
One ton hay—Mrs. H. E. Cotton	6 00
Three cords wood—Andrew Jacobson	13 50
One ton alfalfa hay—O. F. Manock	5 50
One ton alfalfa hay—O. F. Manock	6 00
Two pairs blankets—O'Connor, Moffatt & Co.	13 00
Three joints stove-pipe—John J. Menges	1 05
Two ells—John J. Menges	70
Fifty pounds lime—Geo. E. Colby	75
Lock-knobs and screws—J. McClain	85
Hinges and screws—J. McClain	25

Bill of Edward G. Allen, in pounds, shillings, and pence; total in dollars and cents:

Church's "Laboratory Guide"	s. d.
Allen's "Organic Analysis"	5 0
Wenklyn's "Water Analysis"	10 6
Sutton's "Volumetric Analysis"	3 10
Sutton's "Volumetric Analysis"	12 0
Fresenius' "Qualitative"	11 3
Fresenius' "Quantitative," Vol. I.	11 3
Blythe's "Foods"	12 0
Warikler's "Gas Analysis"	5 3
Fresenius' "Quantitative"	4 0
Hehner's "Alcohol Tables"	2 8
Carpenter's "The Microscope" (sixth ed.)	15 0
Commission, $7\frac{1}{2}$ per cent, and postage	14 7

26 29

Ink and blotting pads—Geo. F. Bell	45
One thousand nine hundred and eighty-three pounds ground barley—Geo. F. Bell	27 24
Twine and rope—Geo. F. Bell	1 10
One broom—Geo. F. Bell	20
One box—Geo. F. Bell	50
Six thousand one hundred and twenty pounds hay, Paso Robles Station—Thomas Huey	27 55
Two tons alfalfa, Tulare Station—O. F. Manock	12 00
Nineteen hundred and eighty-five pounds ground barley—J. Goldman & Co.	24 82
Salt—J. Goldman & Co.	12
One gallon oil—J. Goldman & Co.	1 25
Demijohn—J. Goldman & Co.	1 00
Three hundred and four feet Oregon pine—San Joaquin Lumber Co.	9 12
Seven feet redwood—San Joaquin Lumber Co.	32
One leather—Woodin & Little	1 00
Postage on same—Woodin & Little	08
Nine pairs T hinges—Jos. McClain	90
Ten dozen screws—Jos. McClain	60
Seventeen hundred and ninety pounds land plaster—W. H. Fauntleroy	13 42
One hundred and fifteen pounds grapes—George Hansen	3 45

Repairing gate, Paso Robles Station—Clark Elliott.....	\$1 50
One spoke and setting tire, Paso Robles Station—Clark Elliott.....	2 40
Ten shoes reset, Paso Robles Station—Clark Elliott.....	2 50
Two new shoes, Paso Robles Station—Clark Elliott.....	90
One half ton barley—Paine & Lattin.....	21 00
One ton wheat—Paine & Lattin.....	13 00
One half ton rolled barley—Paine & Lattin.....	10 00
Two sacks redwood kindling—J. C. Asten.....	50
One half cord pine—J. C. Asten.....	4 50
One cord oak wood—J. C. Asten.....	10 50
One ton coal—J. C. Asten.....	11 00
One thousand pounds hay—Henry Warner.....	4 50
Six thousand three hundred and sixty pounds hay—Henry Warner.....	31 80
Five pounds nails—Bennett, Shackelford & LeBlanc.....	30
Tags—Bennett, Shackelford & LeBlanc.....	25
Wire—Bennett, Shackelford & LeBlanc.....	30
One ax—Bennett, Shackelford & LeBlanc.....	1 50
One coupling—Bennett, Shackelford & LeBlanc.....	1 50
One drip-pan and shoe—Bennett, Shackelford & LeBlanc.....	90
One pair hinges—Bennett, Shackelford & LeBlanc.....	05
Four new shoes—Clark Elliott.....	1 50
Four new shoes—Clark Elliott.....	1 50
One shoe reset—Clark Elliott.....	25
Buggy whip—T. F. Hood.....	25
Fifty feet redwood—Salinas Valley Lumber Co.....	1 00
One hundred and sixty feet molding—Salinas Valley Lumber Co.....	1 60
One ton alfalfa hay—O. F. Manock.....	6 00
One ton alfalfa hay—O. F. Manock.....	6 00
One hundred and eighty-two feet lumber, M. P.—San Joaquin Lumber Co.....	5 67
One hundred and sixty-three feet redwood—San Joaquin Lumber Co.....	4 89
Wrapping paper—George F. Bell.....	25
Sweet oil—George F. Bell.....	25
Chimney—George F. Bell.....	20
Blasting powder—George F. Bell.....	3 50
Blasting fuse—George F. Bell.....	75
Matches—George F. Bell.....	05
Squirrel poison—George F. Bell.....	2 00
Legal cap paper—George F. Bell.....	40
Blotting pads—George F. Bell.....	30
Three and one half pounds staples—W. S. Lewis.....	25
Two lap links, etc.—W. S. Lewis.....	90
One ax handle—W. S. Lewis.....	45
One bottle turpentine—W. S. Lewis.....	25
One half dozen gopher traps—W. S. Lewis.....	1 50
One pound white lead—W. S. Lewis.....	15
Four new shoes—C. Elliott.....	1 50
One cold chisel—C. Elliott.....	50
Eleven thousand nine hundred and eighty pounds barley—G. H. Rinehart & Bros.....	119 80
Three shovels—Hawley, King & Co.....	2 61
Two spades—Hawley, King & Co.....	1 76
Three steel-bowed garden rakes—Hawley, King & Co.....	1 35
One hay rake—Hawley, King & Co.....	40
Two No. 2 hoes—Hawley, King & Co.....	1 20
Three garden hoes—Hawley, King & Co.....	99
Two scuffle hoes and handles—Hawley, King & Co.....	1 30
One surface pick and handle—Hawley, King & Co.....	1 00
One Collins mattock and handle—Hawley, King & Co.....	1 25
Three garden lines—Hawley, King & Co.....	45
Two pairs pruning shears—Hawley, King & Co.....	2 50
Six garden trowels—Hawley, King & Co.....	2 70
Two axes and handles—Hawley, King & Co.....	2 30
One steel sledge and handle—Hawley, King & Co.....	1 60
One grindstone, mounted—Hawley, King & Co.....	4 00
Six scythe stones—Hawley, King & Co.....	25
Two scythes and snaths—Hawley, King & Co.....	2 00
One grass hook—Hawley, King & Co.....	50
One oil stone—Hawley, King & Co.....	75
Two Meydole hammers—Hawley, King & Co.....	1 00
One sawbuck—Hawley, King & Co.....	50
One bucksaw—Hawley, King & Co.....	75
One jack plane—Hawley, King & Co.....	50
One smooth plane—Hawley, King & Co.....	45
Four socket chisels—Hawley, King & Co.....	1 50
One hand saw, 28-inch—Hawley, King & Co.....	1 35
One rip saw, 28-inch—Hawley, King & Co.....	1 60

One spade—Hawley, King & Co.	\$0 88
One dozen saw files—Hawley, King & Co.	50
One flat file—Hawley, King & Co.	50
One half-round file—Hawley, King & Co.	50
One horse rasp—Hawley, King & Co.	50
One claw hatchet—Hawley, King & Co.	50
One shingling hatchet—Hawley, King & Co.	50
One screwdriver, 10-inch—Hawley, King & Co.	30
Two dividers, 8-inch—Hawley, King & Co.	30
One auger handle—Hawley, King & Co.	70
One posthole auger—Hawley, King & Co.	2 25
Four gross screws—Hawley, King & Co.	1 25
One bench vise and anvil combined—Hawley, King & Co.	5 00
Two wrenches—Hawley, King & Co.	1 10
One pair wire pliers—Hawley, King & Co.	1 00
Two copper oilers—Hawley, King & Co.	50
Two 2-foot rules—Hawley, King & Co.	60
One measuring tape—Hawley, King & Co.	85
One plumb and level—Hawley, King & Co.	1 00
One steel square—Hawley, King & Co.	75
One ratchet brace and bits—Hawley, King & Co.	3 75
One dozen papers tacks—Hawley, King & Co.	33
One dozen chalk lines—Hawley, King & Co.	50
Six balls hemp twine—Hawley, King & Co.	75
One scoop shovel—Hawley, King & Co.	1 25
One hundred and twenty-five pounds assorted nails—Hawley, King & Co.	5 00
Two 3-gallon water pots—Hawley, King & Co.	4 00
Four garden sieves—Hawley, King & Co.	2 40
One set draughtsman's tools—Hawley, King & Co.	2 00
One architect square—Hawley, King & Co.	75
Two pairs patent pipe tongs—Hawley, King & Co.	3 00
One draw knife—Hawley, King & Co.	75
One washer cutter—Hawley, King & Co.	1 00
Two pruning knives—Hawley, King & Co.	68
One horse brush—Hawley, King & Co.	50
One currycomb—Hawley, King & Co.	25
One lantern—Hawley, King & Co.	75
One oil can—Hawley, King & Co.	50
One stable fork—Hawley, King & Co.	55
One stable broom—Hawley, King & Co.	50
Two stable pails—Hawley, King & Co.	1 00
One saw set—Hawley, King & Co.	75
Cartage—Hawley, King & Co.	1 00
Seven hundred and fifty pounds seed barley—John H. Graber	11 62
Five hundred and eighty-nine feet lumber—F. M. Whitmore	13 25
Six hundred and two feet clear cedar—F. M. Whitmore	18 08
Halter strap and repairing collar—E. L. Freeman	75
Breast strap slides—E. L. Freeman	25
Neckyoke center—E. L. Freeman	1 50
Laces—E. L. Freeman	50
Repairing bridle—E. L. Freeman	25
Paper—E. L. Freeman	1 00
Box of pens—E. L. Freeman	75
Strap slides—E. L. Freeman	25
One light glass—E. L. Freeman	15
Repairing saddle—E. L. Freeman	25
One lantern—J. M. Levy	1 75
One package screws—J. M. Levy	1 25
Coal oil—J. M. Levy	1 50
Chisel—J. M. Levy	90
Wire—J. M. Levy	30
Ax—J. M. Levy	1 00
Hatchet handle—J. M. Levy	10
Currycomb—J. M. Levy	25
Pail—J. M. Levy	50
Salt—J. M. Levy	50
Gimlet—J. M. Levy	50
Oil cans—J. M. Levy	25
Three shoes—Cox & Williams	1 50
Four rods and eight ties—Cox & Williams	3 50
Five shoes—Cox & Williams	2 50
Two joints terracotta pipe—J. R. Hewitt	2 50
Galvanized wire—J. R. Hewitt	50
Repairs—J. R. Hewitt	25
Twine—J. R. Hewitt	75
Pint measure—J. R. Hewitt	35

Kettle—J. R. Hewitt	\$2 50
Tickling—J. M. Levy	2 27
Ground barley—J. M. Levy	1 80
Saddle blanket—J. M. Levy	1 25
Coal oil—J. M. Levy	1 50
Screws—J. M. Levy	1 00
Pruning knife—J. M. Levy	1 50
Broom—J. M. Levy	50
One keg white lead—J. M. Levy	2 50
Two gallons boiled oil—J. M. Levy	1 80
Fifteen pounds limestone—J. M. Levy	2 25
Eight bolts—E. Ginocchio & Bro.	88
Ring—E. Ginocchio & Bro.	25
Nails—E. Ginocchio & Bro.	50
Washers—E. Ginocchio & Bro.	25
Five gallons boiled oil—E. Ginocchio & Bro.	4 50
Tacks—E. Ginocchio & Bro.	20
Fifteen pounds red paint—E. Ginocchio & Bro.	75
Liniment—E. Ginocchio & Bro.	1 00
One hundred and twenty pounds barley—E. Ginocchio & Bro.	2 55
Brush—E. Ginocchio & Bro.	1 00
Fifteen pounds red paint—E. Ginocchio & Bro.	75
Auger—E. Ginocchio & Bro.	85
White lead—E. Ginocchio & Bro.	2 50
Four hundred and forty-five pounds seed barley—E. Ginocchio & Bro.	9 56
One window—E. Ginocchio & Bro.	2 25
Four pairs hinges—E. Ginocchio & Bro.	2 60
Ninety-five pounds barley—E. Ginocchio & Bro.	2 01
Twenty pounds nails—E. Ginocchio & Bro.	1 00
Hooks and locks—E. Ginocchio & Bro.	1 10
Hinges—E. Ginocchio & Bro.	1 10
Saw—E. Ginocchio & Bro.	1 75
Bolts—E. Ginocchio & Bro.	25
Pencils—E. Ginocchio & Bro.	50
Basket—E. Ginocchio & Bro.	50
Urnstone—E. Ginocchio & Bro.	15
Chain—E. Ginocchio & Bro.	50
Repairs—E. Ginocchio & Bro.	25
Repairing traces—J. R. McCain	1 50
One leather strap—J. R. McCain	50
Repairing bridle—J. R. McCain	25
One ton alfalfa hay—O. F. Manock	6 00
Three and one half cords wood—Andrew Jacobson	17 50
Two thousand three hundred and fifteen pounds hay—Geo. H. Rinehart & Bros.	23 15
Turpentine—J. M. Levy	50
Boiled oil—J. M. Levy	1 00
Padlock—J. M. Levy	75
Coal oil—J. M. Levy	1 50
Plow—J. M. Levy	5 00
Oil can—J. M. Levy	50
Ink—J. M. Levy	75
Pens—J. M. Levy	25
One hundred and sixty pounds barley—J. M. Levy	2 80
Sheets and pillow cases—J. M. Levy	4 00
Twine—J. M. Levy	50
Powder and shot—J. M. Levy	75
Nails—J. M. Levy	50
Four horseshoes—Cox & Williams	2 00
Repairing brake—Cox & Williams	50
Seven shoes—Cox & Williams	3 50
Bolts—Cox & Williams	50
Repairing neckyoke—Cox & Williams	50
Repairing brake—Cox & Williams	50
Repairing brake—Cox & Williams	50
Fuse and handle—E. Ginocchio & Bro.	1 10
Nails—E. Ginocchio & Bro.	25
Axle grease—E. Ginocchio & Bro.	50
One thousand four hundred and eighty pounds hay—G. H. Rinehart & Bros.	14 80
One thousand two hundred and fifty pounds hay—G. H. Rinehart & Bros.	12 50
Eighty pounds barley—J. M. Levy	1 40
Three shoes—J. M. Levy	1 50
Charcoal—Hewitt Bros.	25
Trysquare and gimlet—Hewitt Bros.	1 25
One thimble—Hewitt Bros.	1 00
Three joints pipe—Hewitt Bros.	1 20
One $\frac{3}{8}$ -inch bit—Hewitt Bros.	35

One bit—E. G. Freeman	\$0 50
One halter—E. G. Freeman	25
Lacestrings—E. G. Freeman	50
Repairing saddle—E. G. Freeman	1 00
Envelopes—E. G. Freeman	10
Varnish—E. G. Freeman	85
Pencils and envelopes—E. G. Freeman	70
Brass nails—E. G. Freeman	50
Two chair seats—E. G. Freeman	50
Lamp shade—E. G. Freeman	15
Two runners for sled—Cox & Williams	2 00
Repairing sled runner—Cox & Williams	25
Two bottles—Cox & Williams	50
One pair gate hinges—Cox & Williams	2 00
One clasp—Cox & Williams	40
Eight peg pockets—Cox & Williams	2 00
One shoe—Cox & Williams	50
One nail set—Cox & Williams	25
Recording deed—George Hansen	2 00
Recording deed—George Hansen	4 00
Notary's fees—George Hansen	50
One keg white lead—E. Ginocchio & Bro.	2 00
Five gate hooks and eyes—E. Ginocchio & Bro.	50
Hasps—E. Ginocchio & Bro.	25
Turpentine—E. Ginocchio & Bro.	1 00
Broom—E. Ginocchio & Bro.	35
Chair—E. Ginocchio & Bro.	25
Nails—E. Ginocchio & Bro.	1 00
Forty feet flooring—E. Ginocchio & Bro.	1 60
Boiled oil—E. Ginocchio & Bro.	1 25
Eighty-one pounds barley—E. Ginocchio & Bro.	1 62
Ninety-five pounds barley—E. Ginocchio & Bro.	1 90
Nails—E. Ginocchio & Bro.	3 25
Horse liniment—E. Ginocchio & Bro.	25
Two pairs butts—E. Ginocchio & Bro.	50
One can coal oil—J. M. Levy	1 50
Kettle—J. M. Levy	1 25
Salt—J. M. Levy	75
One chisel—Cox & Williams	15
One bolt—Cox & Williams	15
Two hundred and ninety-five pounds grapes—Cox & Williams	7 05
Bolts—E. Ginocchio & Bro.	8 13
Coal oil—E. Ginocchio & Bro.	1 50
Lantern—E. Ginocchio & Bro.	1 75
One yard wire cloth—E. Ginocchio & Bro.	50
Strap hinges—E. Ginocchio & Bro.	35
Wheat—E. Ginocchio & Bro.	75
Tacks—E. Ginocchio & Bro.	60
Freight—E. Ginocchio & Bro.	55
Bolts—E. Ginocchio & Bro.	1 92
Washers—E. Ginocchio & Bro.	50
Staples—E. Ginocchio & Bro.	25
One angle iron—Cox & Williams	1 00
Six shoes—Cox & Williams	3 00
One pair hinges—Cox & Williams	1 00
Two bolts—Cox & Williams	25
Three hundred and twenty-two feet lumber—F. M. Whitmore	9 20
Two mail pouches—George Hansen	1 00
Strychnine—George Hansen	50
Ten thousand three hundred and fifty-six pounds barley hay—Mrs. M. A. McKey	103 56
Six thousand five hundred and seventy-one pounds hay—John McLelland	36 14
Three thousand pounds barley—J. H. Graber	49 50
Five hundred pounds bran—J. H. Graber	7 00
Four thousand pounds hay—J. H. Graber	30 00
Three tons alfalfa hay—John Bauman	18 00
Twenty-five pounds white lead—C. H. Marshall & Co.	2 50
Five gallons linseed oil—C. H. Marshall & Co.	3 75
Nails—E. Ginocchio & Bro.	50
Coal oil—G. F. Bell	1 75
Eight and one half pounds rope—G. F. Bell	1 70
Five hundred and seventy-one pounds barley—G. F. Bell	8 50
One barrel coal tar—Oakland Gas Co.	5 75
One office map—S. W. Dunn	2 00
Boxes—Sol. Greenhood	2 00
Two thousand pounds bone meal—Cox Seed and Plant Co.	28 00

Ninety-two apple trees for Pomona Station—California Nursery Co.	\$13 80
Fifty pear trees for Pomona Station—California Nursery Co.	7 50
Twenty cherry trees for Pomona Station—California Nursery Co.	4 00
Fifty plum trees for Pomona Station—California Nursery Co.	9 00
Twenty prune trees for Pomona Station—California Nursery Co.	4 00
Seventy-four peach trees for Pomona Station—California Nursery Co.	14 80
Twenty-two apricot trees for Pomona Station—California Nursery Co.	4 40
Twenty-eight almond trees for Pomona Station—California Nursery Co.	4 20
Twenty fig trees for Pomona Station—California Nursery Co.	8 00
Thirty-eight olive trees for Pomona Station—California Nursery Co.	19 40
Eight Japanese persimmon trees for Pomona Station—California Nursery Co.	3 20
Six pomegranate trees for Pomona Station—California Nursery Co.	2 00
Two carob trees for Pomona Station—California Nursery Co.	1 50
Two loquat trees for Pomona Station—California Nursery Co.	1 20
Packing trees for Pomona Station—California Nursery Co.	1 25
Twenty-five apple trees for Amador Station—California Nursery Co.	3 75
Two quince trees for Amador Station—California Nursery Co.	50
Thirteen pear trees for Amador Station—California Nursery Co.	1 95
Nineteen peach trees for Amador Station—California Nursery Co.	3 80
Ten plum trees for Amador Station—California Nursery Co.	1 80
Four prune trees for Amador Station—California Nursery Co.	80
Seven nectarine trees for Amador Station—California Nursery Co.	1 40
Six cherry trees for Amador Station—California Nursery Co.	1 20
Eleven apricot trees for Amador Station—California Nursery Co.	2 20
Two walnut trees for Amador Station—California Nursery Co.	1 50
Four chestnut trees for Amador Station—California Nursery Co.	2 25
Three filbert trees for Amador Station—California Nursery Co.	2 25
Fifteen almond trees for Amador Station—California Nursery Co.	2 25
Ten blackberry bushes for Amador Station—California Nursery Co.	1 00
Ten gooseberry bushes for Amador Station—California Nursery Co.	1 00
Ten gooseberry bushes for Amador Station—California Nursery Co.	1 50
Two currant bushes for Amador Station—California Nursery Co.	1 00
Packing same—California Nursery Co.	50
Eleven cherry trees for Paso Robles Station—California Nursery Co.	2 20
Eight almond trees for Paso Robles Station—California Nursery Co.	1 20
Seventeen almond trees for Paso Robles Station—California Nursery Co.	2 55
Fifteen pear trees for Paso Robles Station—California Nursery Co.	2 25
Twelve apricot trees for Paso Robles Station—California Nursery Co.	2 40
Nine plum trees for Paso Robles Station—California Nursery Co.	1 62
Eleven prune trees for Paso Robles Station—California Nursery Co.	2 20
Ten fig trees for Paso Robles Station—California Nursery Co.	3 10
Twenty-four currant bushes for Paso Robles Station—California Nursery Co.	2 40
Forty gooseberry bushes for Paso Robles Station—California Nursery Co.	3 50
Forty blackberry bushes for Paso Robles Station—California Nursery Co.	3 00
Baling—California Nursery Co.	50
Twenty-two apricot trees for Tulare Station—California Nursery Co.	4 40
Fifty-four peach trees for Tulare Station—California Nursery Co.	10 80
Ten nectarine trees for Tulare Station—California Nursery Co.	2 00
Twenty plum trees for Tulare Station—California Nursery Co.	3 60
Four prune trees for Tulare Station—California Nursery Co.	80
Five apple trees for Tulare Station—California Nursery Co.	75
Four almond trees for Tulare Station—California Nursery Co.	60
Four pear trees for Tulare Station—California Nursery Co.	60
Two olive trees for Tulare Station—California Nursery Co.	1 00
Four fig trees for Tulare Station—California Nursery Co.	1 45
Baling—California Nursery Co.	50
Four hundred pounds nitrate of soda—H. M. Newhall & Co.	10 99
Thirty-four orange trees for Pomona Station—Twogood & Cutter.	40 00
One and one half cords wood for Tulare Station—A. Jacobson.	7 50
Wire for Tulare Station—J. Forrer.	50
One hundred and seventy-six feet lumber—Salinas Valley Lumber Co.	3 93
One buggy cushion—T. F. Hood.	1 75
One can harness oil—T. F. Hood.	30
One mane and tail comb—T. F. Hood.	50
One buggy washer—T. F. Hood.	25
Twenty pounds twine—T. C. Jameson.	2 50
One caldron—Geo. F. Bell.	5 50
Seven hundred and ten pounds wheat—Central Mill Co.	9 25
Three hundred and five feet common lumber—F. M. Whitmore.	6 86
One can coal oil—E. Ginocchio & Bro.	1 50
Hinges and padlock—E. Ginocchio & Bro.	1 25
One pound bluestone—E. Ginocchio & Bro.	15
Oil—J. V. Webster.	3 45
One demijohn—Julius Forrer.	65
Beeswax—Julius Forrer.	1 25
Five pounds wire nails—W. S. Lewis & Co.	30

Two balls twine—W. S. Lewis & Co.	\$0 40
Two pounds rope—W. S. Lewis & Co.	40
Five pounds wire nails—W. S. Lewis & Co.	30
Singletree—W. S. Lewis & Co.	85
Twenty-two bolts—W. S. Lewis & Co.	92
One bit—W. S. Lewis & Co.	30
Two clevises—W. S. Lewis & Co.	55
Bolts—W. S. Lewis & Co.	15
Two lap links—W. S. Lewis & Co.	15
Two bolts—W. S. Lewis & Co.	15
One pound white lead—W. S. Lewis & Co.	15
Bluestone—E. Ginocchio & Bro.	10
White lead—E. Ginocchio & Bro.	1 25
Fifteen pounds nails—E. Ginocchio & Bro.	75
Coal oil—E. Ginocchio & Bro.	2 75
Axle grease—E. Ginocchio & Bro.	50
Eighty-seven pounds barley—E. Ginocchio & Bro.	1 84
Rosin—E. Ginocchio & Bro.	25
Two cinch straps—E. L. Freeman	1 00
Breast snaps—E. L. Freeman	40
Breast snaps—E. L. Freeman	25
Nails, etc.—E. L. Freeman	1 00
Chisel—Cox & Williams	35
Wrench—Cox & Williams	25
Three shoes, No. E—Cox & Williams	1 50
Iron—Cox & Williams	75
Five pipe joints—E. Ginocchio & Bro.	1 25
Five packing boxes—Stewart & Trowbridge	1 30
One packing crate—J. M. McNamara	40
Beeswax—Dagget & Co.	40
Lemon squeezer—W. Meese	1 00
One packing box—J. Honer	25
Two packing boxes—J. Honer	50
Second-hand books—H. McAdam	5 50
Maps for orchids—Carbonne & Monte	50
Three tons hay—J. H. Graber	48 00
Four hundred and sixty grape cuttings—California Nursery Co.	4 60
Packing same—California Nursery Co.	25
One thousand pear stocks—California Nursery Co.	20 00
Five hundred cherry stocks—California Nursery Co.	5 00
One thousand apple stocks—California Nursery Co.	10 00
Box for same	25
Bill of J. L. Howland for trees:	
Six Washington Navel	\$9 00
Four Mediterranean Sweet	6 00
Four St. Michael's	6 00
Four Malta Blood	6 00
Four Hart's Tardiff	6 00
Four Homossassa	6 00
Four Parson Brown	6 00
Four Magnum Bonum	6 00
Two Eureka Simons	2 50
Three Lisbon	2 50
Two Villa Franca	2 50
One collar with padding, for horse—Julius Forrer	58 50
Three hundred and four feet redwood—O. J. Brown	3 75
Repairing harness—J. R. McCain	8 36
Two thousand three hundred and forty grape cuttings—Ginlio Apra	1 50
Twelve barrels plaster—H. Cowell & Co.	25 35
Exchange in harness, Pomona Station—J. R. McCain	27 00
Four shoes—Charles Sears	13 00
One crank and hook—Charles Sears	2 00
One singletree—Charles Sears	65
One half dozen gopher traps—Ira F. White & Son	1 25
Four cans axle grease—Ira F. White & Son	1 25
Two hundred feet wire—Ira F. White & Son	1 00
Thirty-two feet pine lumber—Salinas Valley Lumber Co.	1 00
One hundred and thirty-six feet redwood lumber—Salinas Valley Lumber Co.	92
Eighteen feet clear lumber—Salinas Valley Lumber Co.	3 61
Sixty feet refuse lumber—Salinas Valley Lumber Co.	90
Labor on same—Salinas Valley Lumber Co.	1 30
Five sacks screenings—Central Mill Co.	25
One shoe reset—Clark Elliott	6 05
Repairing cart seat—Clark Elliott	25
Two new and two old shoes—Clark Elliott	1 25
	1 40

Crosstie on clip—Clark Elliott	\$0 25
Eight new shoes—Clark Elliott	3 60
Six hundred and twenty-eight feet rough lumber—F. M. Whitmore	14 13
Two plow points—E. Ginocchio & Bro.	1 00
One paint brush—E. Ginocchio & Bro.	50
Seven 1½-inch joints—E. Ginocchio & Bro.	1 75
One pair hinges—E. Ginocchio & Bro.	25
Two gallons oil—E. Ginocchio & Bro.	1 80
Fifty feet fuse—E. Ginocchio & Bro.	38
Eighty pounds barley—E. Ginocchio & Bro.	1 70
Sixty pounds bran—E. Ginocchio & Bro.	98
Assorted nails—E. Ginocchio & Bro.	75
Horse salt—E. Ginocchio & Bro.	62
Five pounds Prince metallic paint—E. Ginocchio & Bro.	50
One case coal oil—E. Ginocchio & Bro.	1 50
Steel trap—E. Ginocchio & Bro.	2 50
Paint brush—E. Ginocchio & Bro.	50
Horse liniment—E. Ginocchio & Bro.	1 00
Oil cloth—E. Ginocchio & Bro.	75
Five pounds nails—E. Ginocchio & Bro.	25
Pitch tar—G. Hansen	50
Keeping dog—G. Hansen	1 50
Two shoes—Cox & Williams	1 00
Three shoes—Cox & Williams	1 50
Two shoes set—Cox & Williams	75
Three shoes and one set—Cox & Williams	1 85
Cutting six acres hay—Henry Sandoz	6 00
	<u>\$1,840 42</u>

APPENDIX No. 3 U—*Agricultural Experiment Stations—Tools, Implements, and Machinery.*

Balance on one thoroughbrace wagon—Cox & Williams	\$45 39
One light spring wagon—Phil. Stein	65 00
One Concord harness (set)—J. R. McCain	25 00
Two Concord harness (single)—J. R. McCain	20 00
One road harness (single)—J. R. McCain	18 50
One half dozen bars harness soap—J. R. McCain	1 75
One quarter dozen cans harness oil—J. R. McCain	1 50
One whip—J. R. McCain	1 25
Three halters and straps—J. R. McCain	3 50
One pair sweat pads—J. R. McCain	1 50
Two horse blankets—J. R. McCain	4 50
Two surcingles—J. R. McCain	2 00
Two steel plates on shafts—Clark Elliott	1 75
One seat spring—Clark Elliott	1 50
Three bolts to wagon—Clark Elliott	30
Two pairs clipper shears—W. S. Lewis & Co.	7 00
Five pounds nails—W. S. Lewis & Co.	32
One ax—W. S. Lewis & Co.	1 25
One wedge—W. S. Lewis & Co.	60
Repairing harness—T. F. Hood	1 05
Repairing wagon—Julius Forrer	1 25
One Studebaker wagon—Phil. Stein	100 00
One steel plow—Phil. Stein	11 20
Two 1-horse plows—Phil. Stein	12 00
One patent harrow—Phil. Stein	16 50
One horse hoe—Phil. Stein	8 00
One hundred feet hose with couplings—Phil. Stein	25 50
One garden barrow—Phil. Stein	3 75
One pitchfork—Phil. Stein	45
Two spading forks—Phil. Stein	1 40
One set doubletrees—Phil. Stein	2 75
One singletree—Phil. Stein	1 25
Sharpening two mattocks—Charles Sears	40
Eight new shoes—Charles Sears	3 00
Repairing wagon pole—Charles Sears	75
Sharpening plow point—Charles Sears	25
Two 12-inch steel plowshares—Phil. Stein	6 00
Sharpening plow—Charles Sears	25
Sharpening plow—Charles Sears	25
Plow pointed—Charles Sears	-1 00
Plow pointed—Charles Sears	1 00
Plow repaired—Charles Sears	50
One plow pointed and sharpened—Clark Elliott	75
Four new shoes—Clark Elliott	1 50

Setting axle on cart—Clark Elliott	\$1 50
Drilling holes in four bands—Cox & Williams	1 20
Four shoes—Clark Elliott	1 50
Two plows sharpened—Clark Elliott	50
One plow point—Clark Elliott	50
Setting axle—Clark Elliott	1 50
Two shafts for roller—Clark Elliott	1 00
Two boxes—Clark Elliott	50
One harness strap—Clark Elliott	35
Labor—Clark Elliott	15
Ten front coulters—Baker & Hamilton	6 00
Ten rear coulters—Baker & Hamilton	6 00

\$424 06**APPENDIX No. 3 V—Agricultural Experiment Stations—Traveling Expenses.**

Traveling expenses—E. W. Hilgard	\$9 30
Traveling expenses for August—F. T. Bioletti	17 90
Traveling expenses for August—W. G. Klee	27 95
Traveling expenses for August—L. Paparelli	27 70
Traveling expenses for September—F. T. Bioletti	5 70
Traveling expenses for September—L. Paparelli	19 20
Traveling expenses for September—L. Paparelli	2 80
Traveling expenses—E. F. Goodyear	2 20
Traveling expenses—E. W. Hilgard	42 70
Traveling expenses for August—E. W. Hilgard	7 90
Traveling expenses for September—E. Kellner	8 50
Traveling expenses for October—L. Paparelli	10 25
Traveling expenses for November—E. J. Wickson	6 25
Traveling expenses for November—E. W. Hilgard	10 20
Traveling expenses for November—L. Paparelli	10 70
Traveling expenses for December—L. Paparelli	7 85
Traveling expenses for November—C. H. Shinn	23 30
Traveling expenses for November—K. McLennan	23 30
Traveling expenses for December—C. H. Shinn	14 40
Traveling expenses for December—L. Paparelli	2 60
Traveling expenses for December—E. W. Hilgard	21 95
Traveling expenses for October—George Hansen	20 95
Traveling expenses for January—L. Paparelli	4 60
Traveling expenses for March—L. Paparelli	2 40
Traveling expenses for January—E. Kellner	9 75
Traveling expenses for January—C. H. Shinn	22 75
Traveling expenses for February—C. H. Shinn	14 00
Traveling expenses for March—E. F. Goodyear	1 25
Traveling expenses for March—G. E. Colby	1 80
Traveling expenses—E. W. Hilgard	2 45
Traveling expenses—F. T. Bioletti	6 65
Traveling expenses—L. Paparelli	5 00
Traveling expenses—C. H. Shinn	29 20
Traveling expenses—E. F. Goodyear	1 45
Traveling expenses—L. Paparelli	2 15
Traveling expenses—C. H. Shinn	16 90
Traveling expenses—E. W. Hilgard	2 70
Traveling expenses—E. W. Hilgard	45 20

\$497 86**APPENDIX No. 3 W—Agricultural Experiment Stations—Water Supply.**

One gate valve—Woodin & Little	\$5 25
One Pitman box—Woodin & Little	10 00
One strap head—Woodin & Little	
One water tank for Amador Station—Moore & Smith Lumber Co.	22 00
Repairing pump, Paso Robles Station—T. C. Jameson	7 50
One windmill frame, Paso Robles Station—Bennett, Shackelford & LeBlanc	34 00
One windmill, Paso Robles Station—Massey & McCord	40 00
Erecting mast, etc., Paso Robles Station—Massey & McCord	13 00
One 16-foot pine mast, Paso Robles Station—Massey & McCord	1 55
Bolts, nails, etc., Paso Robles Station—Massey & McCord	65
One forked connection—Woodin & Little	2 50
One bolt—Woodin & Little	25
One packing box—Woodin & Little	75
Two valve caps—Woodin & Little	20
Forty-three feet 1½-inch pipe—Hewitt Bros.	6 88
Two thousand and eighty-nine feet lumber—F. M. Whitmore	47 86
Repairing pump—J. J. Williams	3 00
Two days' use of stock pump—Cotton Hardware Co.	4 00

Erecting pipe for windmill—T. C. Jameson	\$10 00
One 1½-inch nipple—T. C. Jameson	25
One 1½-inch service cock—T. C. Jameson	2 50
Tin—J. R. Hewitt	25
Stopcock—J. R. Hewitt	3 00
Bushing—J. R. Hewitt	15
Two hundred feet 1-inch pipe—T. P. Bruce	16 00
One hundred and twenty-five feet ¾-inch pipe—T. P. Bruce	6 88
Two 1-inch G valves—T. P. Bruce	2 00
Two 1-inch bushings—T. P. Bruce	20
One 1-inch T—T. P. Bruce	15
Two 1-inch ells—T. P. Bruce	20
Five pounds cement—T. P. Bruce	15
One reducing coupling—T. P. Bruce	10
Cartage—T. P. Bruce	75
Labor cutting and fitting, etc.—T. P. Bruce	3 00
Repairs to pump—Knight & Co.	22 75
Two gallons vacuum oil	1 25

\$288 97

APPENDIX No. 3 X—*Agricultural Experiment Stations—Live Stock.*

One pair draft horses—Richard Gird	\$400 00
One mare—Paine & Lattin	100 00

\$500 00

APPENDIX No. 4—*College of Agriculture.*

Two thousand five hundred feet 2-inch drain tile—Gladding, McBean & Co.	\$62 50
Eight hundred and seventy-five feet 4-inch drain tile—Gladding, McBean & Co.	35 00
Fifteen feet 4x3 drain tile—Gladding, McBean & Co.	6 00
Ten feet 4x2 drain tile—Gladding, McBean & Co.	4 00
Fourteen feet 3x2 reducers—Gladding, McBean & Co.	4 90
Fourteen feet 4x3 reducers—Gladding, McBean & Co.	5 60
	<u>\$118 00</u>
Less	15 30
	<u>\$102 70</u>
Furniture in seed house—Niehaus Bros. & Co.	317 00
Sharpening four shares—Nelson & McLellan	1 00
One mold board and repairing plow—Nelson & McLellan	6 00
Two picks steeled—Nelson & McLellan	1 50
Two picks sharpened—Nelson & McLellan	50
One pick handle—Nelson & McLellan	25
Expressage for month of June—Patterson & Co.	5 75
Labor for month of June	558 00
Telegrams—Western Union Telegraph Co.	6 81
Expressage—Wells, Fargo & Co.	25 00
Fifteen gallons paint—E. G. Buswell & Co.	22 50
One hundred pounds putty—E. G. Buswell & Co.	5 00
Four boxes 10x16 glass—E. G. Buswell & Co.	13 00
Five pairs glazier's points—E. G. Buswell & Co.	50
Two brushes—E. G. Buswell & Co.	2 00
Two sash tools—E. G. Buswell & Co.	50
Two putty knives—E. G. Buswell & Co.	50
One flat duster—E. G. Buswell & Co.	75
Six picks sharpened—Nelson & McLellan	90
Eight new shoes—Nelson & McLellan	4 00
Repairing knife, etc.—Nelson & McLellan	1 50
Repairing land roller—Nelson & McLellan	18 00
Telegrams—Western Union Telegraph Co.	1 13
Labor for month of July	477 00
One hundred feet ¾-inch garden hose—W. T. Y. Schenck	\$15 00
Ten feet 1-inch garden hose—W. T. Y. Schenck	2 50
	<u>\$17 50</u>
Less 20 per cent	3 50
	<u>14 00</u>
Expressage—Wells, Fargo & Co.	4 85
Labor for month of August	529 00
Expressage—Patterson & Co.	34 40
Expressage—Wells, Fargo & Co.	25 25
Four pounds ammonia phosphate—Justinian Caire	5 40
Four pounds calcium phosphate—Justinian Caire	3 00

Two pounds calcium sulphate—Justinian Caire	90	80
Two pounds ammonia carbonate—Justinian Caire	1	10
Four pounds tartaric acid—Justinian Caire	2	00
Ten pounds 6d nails—Justinian Caire	50	
Ten pounds 8d nails—Justinian Caire	50	
Three dozen 1-gallon demijohns—Justinian Caire	10	80
One dozen 1-gallon demijohns—Justinian Caire	2	70
Two sets crystallizing dishes—Justinian Caire	9	50
Four cylinders—Justinian Caire	1	50
Seven thousand one hundred cubic feet gas—Oakland Gas Co.	17	75
Baling five and one half tons hay—T. W. Keith	10	83
Expressage—Wells, Fargo & Co.	82	55
Labor for month of September	510	00
Sharpening four picks—Nelson & McLellan	60	
Sharpening one share—Nelson & McLellan	25	
Repairing garden shears—Nelson & McLellan	50	
Eight new shoes—Nelson & McLellan	4	00
One bolt	25	
Bill of Mayer & Muller, Berlin, in marks; total in dollars and cents:	Marks,	
Musgratt chemie bd	60.50	
Porto	6.30	
Vega Logarithmen gbd	4.00	
Porto	1.20	
Konig nahrungsmittl	20.00	
Porto	2.80	
Rovasenda ampelographia	4.40	
Briosi et Cavara, i funghi parassiti	32.00	
Porto	2.40	
Frattesi consideraziane sulle allerazioni lei oine	3.80	
Porto	.15	
Briosi et Cavara, i funghi parassiti	8.50	
Porto	.70	
	M. 147.15	35 69
Telegraphing—Western Union Telegraph Co.	4	10
Four gross screw hooks—Hawley Bros.	5	60
Expressage—Wells, Fargo & Co.	122	85
Labor for month of October	468	00
Fifty pounds alkali potash—Justinian Caire	6	25
One bundle extra galvanized hoop iron—Justinian Caire	7	00
Assorted glass tubing—Justinian Caire	7	00
Two pairs small pincers—Justinian Caire	50	
Camel's hair brushes—Justinian Caire	50	
Three brooms—Justinian Caire	1	12
One hair broom—Justinian Caire	2	50
One broom—Justinian Caire	1	00
Tin pipe—Justinian Caire	1	50
One brace—Justinian Caire	1	50
Two screwdrivers—Justinian Caire	50	
Expressage—Patterson & Co.	3	50
Freight from San José, one box grain—Southern Pacific Co.	81	
Five gallons paint—E. G. Buswell & Co.	7	50
Fifty pounds putty—E. G. Buswell & Co.	2	50
Five thousand two hundred cubic feet gas—Oakland Gas Co.	13	00
Expressage—Wells, Fargo & Co.	58	60
Telegrams—Western Union Telegraph Co.	4	00
Twenty boxes for grapes—Eagle Box Manufacturing Co.	1	00
Fifty boxes for grapes—Eagle Box Manufacturing Co.	2	75
Telegrams—Western Union Telegraph Co.	29	
Eight pounds nickel-bronze castings—James M. Beers	2	80
Sixty-one and one half hours' work—James M. Beers	30	75
Expressage—Patterson & Co.	5	35
Sixty gallons Extra Star oil—Whittier, Fuller & Co.	15	60
One thousand four hundred pounds grapes—A. J. Salazar	10	50
One set double harness—George Milligan	30	00
Postage stamps—N. B. Byrne	25	00
Labor picking grapes—Cupertino Wine Co.	14	30
Repairing grindstone and garden shears—Nelson & McLellan	1	50
Eight new shoes—Nelson & McLellan	4	00
Sharpening four shares—Nelson & McLellan	1	00
Expressage—Wells, Fargo & Co.	3	10
Hauling grapes—J. McClain	8	50
Labor for month of November	510	40
Two messages—Sunset Telephone Co.	1	00
Freight to Irvington—Southern Pacific Co.	25	
Six bundles laths—Niehaus Bros. & Co.	3	00

One tray—Walter Meese	\$0 75
One half dozen letter files—Payot, Upham & Co.	3 00
Blotting paper—Payot, Upham & Co.	1 00
One ton Wellington coal—Stewart & Trowbridge	17 00
Six barrels lime—Stewart & Trowbridge	2 25
Ten thousand two hundred cubic feet gas—Oakland Gas Co.	25 50
Freight charges—Southern Pacific Co.	5 25
One paper wire nails, $\frac{1}{2}$ -inch—Savage Bros.	15
One paper wire nails, $\frac{3}{4}$ -inch—Savage Bros.	15
Two papers wire nails, $1\frac{1}{2}$ and 2-inch—Savage Bros.	90
Five pounds copper wire—Savage Bros.	2 00
One keg 8d nails—Savage Bros.	3 35
One spoke shave—Savage Bros.	15
One 6-inch garden shovel—Savage Bros.	75
Two 8-inch garden shovels—Savage Bros.	2 00
One dozen carpenters' pencils—Savage Bros.	65
Two pruning shears—Savage Bros.	3 00
Two brooms—Savage Bros.	3 00
One garden broom—Savage Bros.	5 50
One 2-foot rule—Savage Bros.	10
Six gopher traps—Savage Bros.	1 50
One stable fork—Savage Bros.	75
Five gallons linseed oil—Savage Bros.	3 50
Twenty-five pounds white lead—Savage Bros.	2 50
One stable lantern—J. McClain	75
One dozen wicks—J. McClain	15
One can harness oil—J. McClain	50
Three picks and handles—J. McClain	3 50
Three 14-inch rakes—J. McClain	1 30
Three 10-inch rakes—J. McClain	1 00
One half dozen papers 4-ounce tacks—J. McClain	30
Two mouse traps—J. McClain	30
One half dozen cans axle grease—J. McClain	75
Four thousand bulletins—Dewey & Co.	14 00
Five thousand three hundred cubic feet gas—Oakland Gas Co.	13 25
Labor for month of December, 1890.	481 60
Repairs to farm wagon—Nelson & McLellan	12 00
Telegraphing—Western Union Telegraph Co.	1 74
Licorice plants—Isaac Lea	5 00
Six 32-inch grate bars—Harvey Heating Co.	4 20
Telegraphing—Western Union Telegraph Co.	2 37
Twenty-five pounds tobacco seed—R. L. Ragland	5 58
One ream Willamette cap paper, 10-pound—Payot, Upham & Co.	2 25
One ream Willamette cap paper, 16-pound—Payot, Upham & Co.	3 50
One gross pens—Payot, Upham & Co.	1 00
One half gross pencils—Payot, Upham & Co.	1 50
One half dozen papers pins—Payot, Upham & Co.	38
One ream manilla paper—Payot, Upham & Co.	2 00
One ream manilla paper—Payot, Upham & Co.	4 80
Six record books—Payot, Upham & Co.	10 80
Eighteen record books—Payot, Upham & Co.	8 00
Two dozen white pads—Payot, Upham & Co.	75
Two dozen white pads—Payot, Upham & Co.	2 25
Two dozen white pads—Payot, Upham & Co.	1 50
One dozen pads—Payot, Upham & Co.	1 80
One ream letter paper—Payot, Upham & Co.	3 00
One dozen pyramid pins, No. 5—Payot, Upham & Co.	1 00
One third gross rubber bands—Payot, Upham & Co.	56
Cross-ruled paper—Payot, Upham & Co.	1 00
Expressage—Patterson & Co.	14 85
Expressage—Wells, Fargo & Co.	36 06
Chimney top—J. M. McNamara	11 00
One Abela-Libro del Viticultor—Tauzy, Levy & Co.	2 25
One Tablada Olivo—Tauzy, Levy & Co.	1 50
One Viala-Mission Viticole—Tauzy, Levy & Co.	4 00
One keg—A. Erlandsen	25
One lock repaired—A. Erlandsen	50
Four Pasteur bouges—Justinian Caire	5 00
Two saccharometers and jars—Justinian Caire	4 50
One agate pan and sieve—Justinian Caire	1 00
One agate funnel—Justinian Caire	60
Two thermometers—Justinian Caire	50
One grape knife—Justinian Caire	25
Sixty pounds paraffine—Justinian Caire	9 70
Two gross extra 2-ounce bottles—Justinian Caire	9 00
Three gross extra 1-ounce bottles—Justinian Caire	9 00

One half gross 40-ounce vials—Justinian Caire	\$2 25
Six dozen test tubes—Justinian Caire	2 40
Picrometers—Justinian Caire	2 50
Wash bottles with ground-glass stoppers—Justinian Caire	3 50
Three graduated ground-glass stoppered cylinders—Justinian Caire	3 35
Two pairs rubber gloves—Justinian Caire	2 50
Assorted corks—Justinian Caire	5 00
Twenty-five yards muslin—Justinian Caire	3 12
One dozen 1-gallon demijohns—Justinian Caire	3 80
Fifty-seven yards muslin—Justinian Caire	3 75
One dozen 1-gallon demijohns—Justinian Caire	2 70
One Fletcher gas burner—Justinian Caire	1 80
Five pounds carbon bisulphide—Justinian Caire	2 25
One gross wide-mouth bottles, with corks—Justinian Caire	7 50
Three ounces iodine—Justinian Caire	1 35
One glass-stoppered wash bottle—Justinian Caire	1 75
One pound potassium bromide—Justinian Caire	55
One half pound bismuth nitrate—Justinian Caire	30
One quarter pound oxide antimony—Justinian Caire	40
Arsenic—Justinian Caire	25
Nickel nitrate—Justinian Caire	40
Two pounds litmus—Justinian Caire	1 50
Tin chloral—Justinian Caire	20
Stove wicks—Justinian Caire	40
Tacks—Justinian Caire	50
Eight 15-gallon oak kegs—J. H. Holden	18 00
Eight 17½-gallon oak kegs—J. H. Holden	20 00
Eight 20-gallon oak kegs—J. H. Holden	20 00
Three 25-gallon oak kegs—J. H. Holden	7 50
One Wolf Aschenanalysen, etc.—E. Steiger & Co.	5 04
Postage—E. Steiger & Co.	39
Berssh Prasis d. Weisenberisng—Mayer & Muller—M. 16.60	4 03
One thousand feet redwood lumber—H. W. Taylor & Co.	18 00
Labor gathering grapes—Cupertino Wine Co.	28 20
Labor gathering grapes—Cupertino Wine Co.	2 65
One ton barley—Stewart & Trowbridge	35 00
Five hundred pounds bran—Stewart & Trowbridge	6 50
Labor—Isidor Le Duc	11 75
Three copy books—Payot, Upham & Co.	4 50
Six journals—Payot, Upham & Co.	9 00
Three pencils—Payot, Upham & Co.	45
Four picks sharpened—Nelson & McLellan	60
Six shares sharpened—Nelson & McLellan	1 75
Eight new shoes—Nelson & McLellan	4 00
Three shares and one plow shovel sharpened—Nelson & McLellan	1 65
Six new bolts—Nelson & McLellan	1 55
Telegram and expressage—George Hansen	2 05
Five thousand bulletins—Dewey & Co.	22 50
Expressage—Patterson & Co.	28 25
One copper bath—John J. Menges	6 50
Two hundred and fifty specimen trays—M. Waizman	2 50
Two hundred and fifty specimen trays—M. Waizman	2 50
Telegram—Western Union Telegraph Co.	5 73
Expressage and freight—E. Ginocchio & Bro.	11 35
Expressage and freight—K. McLellan	1 45
Labor for month of January, 1891	463 00
Expressage—Wells, Fargo & Co.	6 15
Four thousand nine hundred cubic feet gas—Oakland Gas Co.	12 25
Hauling grapes from Ione depot to station—Nathaniel Griffin	35 00
Freightage—E. Ginocchio & Bro.	50
Freightage—E. Ginocchio & Bro.	2 35
Expressage—Geo. Hansen	90
Postage—Geo. Hansen	35
Postage—Geo. Hansen	65
Telegram and expressage—Geo. Hansen	1 30
Telegram and expressage—Geo. Hansen	7 25
Expressage—Geo. Hansen	2 50
Postage—Geo. Hansen	35
Postage—Geo. Hansen	45
Telegram and expressage—Geo. Hansen	95
Two bushels winter oats—M. W. Johnson Seed Co.	2 00
Two bushels winter oats—M. W. Johnson Seed Co.	1 50
One half ton Wellington coal—Stewart & Trowbridge	7 00
Fifty pounds peach pits—Thos. A. Cox & Co.	1 00
Ten pounds soft-shell almonds—Thos. A. Cox & Co.	2 50
One half pound Japan pears—Thos. A. Cox & Co.	2 50

Two pounds English walnuts—Thos. A. Cox & Co.	\$0 25
Two pounds Japan chestnuts—Thos. A. Cox & Co.	50
Two pounds Italian chestnuts—Thos. A. Cox & Co.	40
One bushel acorns—B. M. Watson	4 00
Expressage—Wells, Fargo & Co.	2 90
Two adapteurs—Justinian Caire	\$0 70
One Enterprise mill—Justinian Caire	1 50
One case kitchen soap—Justinian Caire	1 00
Three dozen toilet soap—Justinian Caire	2 25
One soldering iron—Justinian Caire	50
Solder—Justinian Caire	35
Asbestos—Justinian Caire	6 75
Twenty-five feet rubber tube—Justinian Caire	1 33
Copper wire—Justinian Caire	2 00
One magnet—Justinian Caire	25
One self-registering thermometer—Justinian Caire	3 50
One thermometer—Justinian Caire	25
One bunghole burner—Justinian Caire	2 50
One compass—Justinian Caire	1 25
Two door springs—Justinian Caire	40
Steel wire gauge—Justinian Caire	40
Eight drawer knobs—Justinian Caire	40
Two sieves—Justinian Caire	1 10
Fifty pounds paraffine—Justinian Caire	7 50
One gallon turpentine—Justinian Caire	65
Three grates—Justinian Caire	50
Small beakers—Justinian Caire	2 50
One grate cleaner—Justinian Caire	50
Assorted twine—Justinian Caire	2 50
One pound hydrobromic acid—Justinian Caire	75
One bottle sulphuric acid—Justinian Caire	3 15
One pound bit. potash—Justinian Caire	40
Five pounds chloroform—Justinian Caire	2 55
Five pounds bisulphide carbon—Justinian Caire	2 25
One pound fuming nitre—Justinian Caire	60
One gross naturalists' vials—Justinian Caire	3 00
One dozen glasses for wine sampling—Justinian Caire	1 00
Three hundred pounds sal soda—Justinian Caire	6 00
	\$60 28
Less 2 per cent	1 20
Expressage one box to Tulare—Julius Forrer	59 08
Postage stamps—N. B. Byrne	60
Three thousand bulletins—Dewey & Co.	25 00
Expressage—Patterson & Co.	16 50
Freight on fertilizers—E. Ginocchio & Bro.	2 25
Telegram—George Hansen	5 12
Telegram—George Hansen	80
Expressage—George Hansen	40
Postage—George Hansen	35
Postage—George Hansen	55
Expressage business with District Attorney—George Hansen	75
Advertising rewards in county papers—George Hansen	3 35
Labor, month of February	4 00
Eighteen thousand seven hundred cubic feet gas—Oakland Gas Co.	421 00
Freight on seeds to Pomona—Southern Pacific Co.	46 75
Freight on peanuts—Southern Pacific Co.	1 40
Freight on grape cuttings from New York—Southern Pacific Co.	2 90
Freight on cuttings—Southern Pacific Co.	29 80
Expressage from San Francisco—Whitney & Co.	25
Telegrams—Western Union Telegraph Co.	1 50
Labor, month of March	10 78
Two barrels K. & R. sulphur—Tillmann & Bendel	438 10
Ten shares sharpened—Nelson & McLellan	16 58
Two iron braces—Nelson & McLellan	2 50
Eight new shoes—Nelson & McLellan	1 00
Repairing plow—Nelson & McLellan	4 00
Repairing neckyoke—Nelson & McLellan	50
Eight new shoes—Nelson & McLellan	50
One plow shovel sharpened—Nelson & McLellan	4 00
Repairing cultivator—Nelson & McLellan	50
Cultivator tooth and bolt—Nelson & McLellan	50
One share pointed, and three bolts—Nelson & McLellan	1 00
Telegrams—Western Union Telegraph Co.	1 00
Three hundred and seventy-one pounds whale-oil soap—Arctic Oil Works	2 56
	12 98

Expressage—Patterson & Co.	\$4 25
Freight on trees—Julius Forrer	4 30
Freight on plants—Julius Forrer	40
Expressage on plants—Julius Forrer	30
Freight on two boxes plants—Southern Pacific Co.	4 95
Freight on three bales trees—Southern Pacific Co.	3 64
Freight on five bales trees—Southern Pacific Co.	60
Freight on two bundles and one box trees—Southern Pacific Co.	11 80
Freight on furniture for office—Southern Pacific Co.	3 24
One bottle ink—R. N. Louks	40
One bottle red ink—R. N. Louks	35
Pens and pencils—R. N. Louks	50
One bottle mucilage—R. N. Louks	25
One time book—R. N. Louks	30
Freight on one barrel tar—R. D. Cruickshank	3 14
Freight on one bale trees—R. D. Cruickshank	1 99
Freight on plants from Berkeley—R. D. Cruickshank	2 50
Expressage on grape cuttings from France—L. Paparelli	1 65
Freight and teaming—E. Ginocchio & Bro.	3 50
Postage—George Hansen	70
Expressage—Wells, Fargo & Co.	3 25
Four hundred grape cuttings—Faucher Creek Nursery	4 00
Baling same—Faucher Creek Nursery	20
Freight on same—Faucher Creek Nursery	45
Labor, month of April	444 00
One hundred and seventy-nine and one half gallons spirits—C. Jost & Son	62 84
Expressage—Patterson & Co.	4 00
Four thousand bulletins—Dewey & Co.	14 00
Seven thousand five hundred cubic feet gas—Oakland Gas Co.	18 75
One ton Wellington coal—Stewart & Trowbridge	13 50
Freight on grapes, Berkeley to Tulare—Julius Forrer	1 25
Postage—George Hansen	25
Expressage—E. Ginocchio & Bro.	60
Membership in Association of American Agricultural Colleges and Experiment Stations for 1890-91	25 00
Freight on trees for arboretum—Southern Pacific Co.	4 45
Expressage—Patterson & Co.	2 25
Expressage on box to E. S. Holden—Wells, Fargo & Co.	1 10
Repairing roller—Nelson & McLellan	1 50
Blade to garden shears—Nelson & McLellan	1 50
Eight new shoes—Nelson & McLellan	4 00
Telegram—Western Union Telegraph Co.	1 00
Expressage—Wells, Fargo & Co.	7 25
Postage stamps—N. B. Byrne	25 00
Eight new shoes—Nelson & McLellan	4 00
Four shares sharpened—Nelson & McLellan	1 00
Repairing cultivator—Nelson & McLellan	50
Expressage—Patterson & Co.	1 00
One hundred feet cedar molding—Niehaus Bros. & Co.	4 75
Six papers tacks—Savage Bros.	25
One and one half yards muslin—Sol. Greenhood	15
Two flags—Sol. Greenhood	20
One quarter gallon turpentine—J. McClain	25
One half dozen Paragon ribbons—G. G. Wickson & Co.	4 50
One window shade—E. Hook	1 00
One police badge—E. T. Allen	1 00
Moving speaking tube in Agricultural Building—J. J. Menges	1 25
Three manure forks—Savage Bros.	3 00
Five thousand two hundred cubic feet gas—Oakland Gas Co.	12 96
Expressage—Wells, Fargo & Co.	5 80
Two tons Wellington coal—Stewart & Trowbridge	24 00
Two thousand pounds rolled barley—Stewart & Trowbridge	36 00
Five hundred pounds bran—Stewart & Trowbridge	5 50
Labor for month of May	450 00
One inkstand—Payot, Upham & Co.	90
One quart Underwood's ink—Payot, Upham & Co.	1 00
One 24-inch ruler—Payot, Upham & Co.	25
One 15-inch ruler—Payot, Upham & Co.	15
One quire buff blotter—Payot, Upham & Co.	1 05
One pair shears—Payot, Upham & Co.	75
One letter opener—Payot, Upham & Co.	25
One dozen penholders—Payot, Upham & Co.	35
One knife eraser—Payot, Upham & Co.	50
Three reams Willamette letter paper—Payot, Upham & Co.	7 92
One bottle ink—Justinian Caire	75
Two bottles India ink—Justinian Caire	60

One bottle mucilage—Justinian Caire	\$1 00	
One half gross corks—Justinian Caire	40	
Six cylinders—Justinian Caire	1 80	
One pound zinc dust—Justinian Caire	31	
Two scales—Justinian Caire	6 00	
Ten pounds oxalic acid—Justinian Caire	1 80	
Sixteen watch glasses—Justinian Caire	2 50	
Sheet cork—Justinian Caire	1 50	
One pound sodium sulphate—Justinian Caire	75	
One set graduated flasks—Justinian Caire	3 65	
One set pipettes—Justinian Caire	95	
Three boxes labels—Justinian Caire	30	
One brush—Justinian Caire	15	
Two pipettes—Justinian Caire	1 30	
One pound chloride sodium, C. P.—Justinian Caire	40	
One fourth pound sulphocyanic ammonia—Justinian Caire	55	
One ounce cadmium chloride—Justinian Caire	40	
One pound ammonioferric alum—Justinian Caire	75	
One half pound molybdic acid—Justinian Caire	1 87	
Three pounds citric acid—Justinian Caire	1 95	
Ten pounds Paris green—Justinian Caire	2 50	
Five pounds London purple—Justinian Caire	90	
Five pounds arsenic—Justinian Caire	50	
Thirty pounds sulphate copper—Justinian Caire	2 10	
Twenty pounds rosin—Justinian Caire	80	
One pound carb. copper—Justinian Caire	85	
Five thousand tags—Justinian Caire	2 50	
One half pound magnesium chloride—Justinian Caire	50	
Six pounds 1-inch wire nails—Justinian Caire	72	
One pair 8-inch T hinges and screws—Justinian Caire	35	
One rim lock—Justinian Caire	35	
One dozen 8-inch wire hooks and eyes—Justinian Caire	65	
Ten feet wire screening, 28 inches wide—Justinian Caire	1 50	
Six packages 4-ounce tacks—Justinian Caire	20	
Six packages 8-ounce tacks—Justinian Caire	25	
Six ax handles—Justinian Caire	1 25	
One hatchet—Justinian Caire	75	
One cut-off saw—Justinian Caire	1 75	
One pair compasses—Justinian Caire	50	
One keyhole saw—Justinian Caire	35	
Two chisels—Justinian Caire	90	
One wood rasp—Justinian Caire	60	
One saw blade—Justinian Caire	35	
Two dozen sandpaper—Justinian Caire	25	
One circular harness punch—Justinian Caire	1 00	
Six saw files—Justinian Caire	60	
Two hundred and fifty-two pounds No. 8 galvanized wire—Willard Beam	10 08	
Four pounds galvanized staples—Willard Beam	40	
Bill of Morris & Kennedy:		
Six sheets paper	\$2 10	
Six Bristol boards	1 20	
W. and N. moist colors	3 95	
Japanned tin box	1 00	
Camel's hair brushes	40	
India ink	25	
Quill pens	50	
Map pens	1 50	
Sib. pencils	1 00	
Four boxes leads	2 60	
Triangular scale	1 50	
Rubber	10	
Thumb tacks	75	
Dividers	2 75	
Ruling pen	65	
	\$20 25	
Less 10 per cent.	2 00	
		18 25
Copying ink—R. D. Cruickshank		30
Freightage—R. D. Cruickshank		1 15
Six hundred and fourteen feet surfaced redwood—H. W. Taylor		18 42
Eight hundred and twenty feet redwood—H. W. Taylor		18 12
One and six tenths thousand laths—H. W. Taylor		5 60
Ninety-two feet pine—H. W. Taylor		2 76
One thousand two hundred and thirty-eight feet redwood—H. W. Taylor		19 81
Mill work on same—H. W. Taylor		5 00

Cartage to mill—H. W. Taylor	\$0 50
Freight on twelve barrels plaster—Southern Pacific Co.	23 40
Telegrams—Western Union Telegraph Co.	83
Postage—George Hansen	35
Two boxes 10x16 window glass—Whittier, Fuller & Co.	6 21
Two maps and expressage—W. B. Walkup & Co.	2 50
One copper kettle—John J. Menges	3 50

\$8,564 68APPENDIX No. 5—*College of Chemistry.*

Expressage—Patterson & Co.	\$0 50
Insurance—Canton Insurance Co.	2 35
Bill of Eimer & Amend, New York:	
Sixty Bunsen burners	\$18 00
Fifty ring stands	24 50
Twenty-five iron clamps	9 00
Four brass clamps	2 20
Ten Bunsen clamps	6 00
Twenty Bunsen fasteners	14 00
Two Bunsen large	1 90
Sixty brass gas jets	3 50
Two stands complete rings and stamps	11 50
Thirty filter pumps	38 00
One filter pump	10 00
Two hundred and four feet rubber tubing, and gauge	20 40
One set reagent bottles	6 83
Forty-five reagent bottles	11 25
Twenty salt-mouth bottles	3 00
Twenty blanks	3 00
Two sets extra reagent bottles	21 58
One hundred and forty-four glass-label reagent bottles	18 50
Fifty-four salt-mouth bottles	9 00
Fifty-eight salt-mouth bottles	5 80
Twenty blanks	2 57
Twenty blanks	3 33
Ten blanks	2 50
Thirty blanks	3 00
Twenty-five dozen rubber stoppers, assorted	43 75
One hundred and twenty feet rubber tubing	10 26
Twelve feet rubber tubing	2 50
Ninety-six feet rubber tubing	10 80
Twelve feet rubber tubing	2 55
Ninety-six feet rubber tubing	6 50
Ninety-six feet rubber tubing	7 87
Twenty-six feet rubber tubing	5 10
Eighty-one feet red rubber tubing	10 75
Four packing cases	3 85

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Bill of E. de Haën, Hanover, Germany, in marks; total in dollars and cents:	Marks.
One cask ferrum sulfurat.	12.00
Twenty-five kr. acid sulfuric pur.	8.75
Ten kr. acid sulfuric fum.	6.50
Twenty-five kr. acid hydrochloral pur.	9.50
Five kr. phosphor in	21.00
One kr. phosphor amorph.	6.00
Five kr. aether sulfuric.	5.00
Two kr. acid hydrofluosilic	2.60
Two kr. acid hydrofluoric fum.	2.40
Two kr. mirbanol	3.60
One half kr. natrium metallic.	6.50
Fifty gr. naliun.	7.00
One kr. naliun sulfurat pro	.60
One kr. naliun zanthogenic	1.10
One kr. kreosotum pur	2.10
Fifty gr. magnesium metallic	2.25
One kr. natrium zanthogenic	1.20
One kr. ol. terebinth rec	1.00
One kr. ol. eusci	1.40
Two kr. plumbum acetic casic.	3.50
One kr. plumbum acetic pur	.75
One kr. plumbum chromic pra	4.00
One kr. plumbum chromic pur fus	3.20
One kr. plumbum hyposulfuros alb	1.30
One half kr. plumbum introsium	7.00

One kr. plumbum peroxydat puriss	M.2.80
Ten kr. plumbum peroxydat puer	9.00
Five kr. plumbum sesquioxysat pur	2.50
Ten kr. plumbum oxydat tut	4.40
Two kr. plumbum oxydat pur	3.00
One kr. plumbum rhodant	2.25
One half kr. plumbum sulfurat pra	1.15
One half kr. sacchar lactis rec	1.25
One half kr. staunum sulfurat	3.15
One half kr. staunum oxydulat pur	3.15
One half kr. staunum oxydat pur	1.50
One kr. staunum arminon muriatic	1.70
One kr. stibium oxydat pur	3.00
One half kr. stibium perchlorict liquid	1.25
One kr. stibium chlorat crist	4.50
One kr. stibium sulfurat aurant pur	2.80
One kr. stibium sulfurat rubeum	3.00
Two kr. steontium sulfuric natur .....	.70
Two kr. steontium carbonic natur .....	.60
One kr. tartarus stibiat crist pur	3.00
One kr. tartarus chem pur	3.75
One half kr. tolual chem pur .....	.70
One kr. titanerz	1.75
One quarter kr. uranium acetic	11.00
One kr. wasserglas kali pu .....	.75
One kr. wasserglas natron pu .....	.40
Eight kr. wasserstoff superonyd technic	5.60
Four kr. wasserstoff superonyd merc	4.00
One kr. zincum sulfurat pur	6.00
One kr. zincum oxydat pur	1.75
Eight kr. zinkstaub	4.80
One half kr. zincum metallic pur	2.25
One half kr. zincum metallic cocill	2.25
One half kr. natrium intros puriss	2.50
Two kr. natrium intros technic	1.60
One kr. natrium permanganic .....	.55
One kr. natrium oxalic puriss	3.00
One hundred gr. cadmium oxydat puriss	2.00
One quarter kr. calcium hypophosphoras	1.75
One quarter kr. calcium phosphorat	1.50
Five kr. carbo animal pulo	1.00
Ten kr. carbo animal granul	2.60
One half kr. chromium metall pur	7.00
Five kr. cuprum sulfuric puriss cw	5.00
One kr. cuprum metallic pra	4.50
One kr. cuprum aluminat platten	1.65
Two kr. ferrum hydricam	1.60
One hundred gr. lithium chloratum	2.00
Five kr. kali caustic dyr	7.50
One half kr. hydrargyum oxyd rubr	4.00
One half kr. jodium resublimat	15.00
Five kr. kalium bisulfuric tech	4.00
Two kr. kalium bisulfuric pur	1.80
Five kr. kalium chloric puriss	6.50
Two. kr. kalium cyanat pur	6.40
One half kr. kalium jodatium	12.50
Five kr. kalium nitric puriss	3.75
One kr. kalium purchloric puriss	6.50
One kr. kalium permang pur crist	1.75
One half kr. kalium phosphoric puriss cr	2.65
Two kr. natrium pyrophosph puriss crist	3.40
Five kr. natrium phosphoric puriss crist	3.00
Ten kr. natrium phosphoric purium crist	4.00
Two kr. natronkalk	4.00
Two kr. natro kali carbonic puriss	7.20
One kr. niccolum chloratum	3.20
One hundred gr. niccolum oxydat puriss	5.00
One kr. niccolum oxydat ingeteche	5.00
Eighty-two hundredths kr. niccolum metallic	4.30
One kr. paraffin	1.40
One kr. paraffin	1.00
One kr. pergament papier india	1.60
One fourth kr. natrium jodatium	7.50
One half kr. natrium hypophosphoros	3.50
One half kr. natrium fluvratum neutral	2.25
One half kr. natrium fluvratum sauer	2.50

Five kr. natrium chlorat puriss	M. 2.25	
Two kr. natrium hydric alcohdep	5.60	
Two kr. natrium hydric alcohdep lac	6.00	
One half kr. natrium hydric puriss	9.00	
Seven kr. natrium carbon anhy n. puriss	11.20	
Fifteen and one half kr. natrium carbon crist puriss	4.35	
Thirty kr. natrium bisulfuros sice	11.40	
Five kr. natrium arsenic	3.25	
Five kr. natrium arsenico	3.50	
Two kr. natrium aluminat	1.20	
One half kr. natrium acthylosulfuric cuit	2.25	
Five kr. natrium acetic puriss cirty	3.25	
Ten kr. mangan peroxydat astiff	5.00	
Ten kr. mangan peroxydat nat pyro	6.00	
Ten kr. mangan peroxydat pyrolus pu	5.50	
One half kr. magnos sulfuros praecip	1.50	
Five kr. mangan peroxydat fismt	3.75	
One kr. magnos sulfuros tech	1.75	
One half kr. caducium	2.50	
One kr. ammon sulfuric pur	1.00	
Two kr. ammon oxalic pur	4.50	
Two kr. ammon nitric pur	4.00	
Cases and packing	95.35	
Consul's certificate	12.60	
	<u>M. 596.10</u>	\$144 55
Freight to Hamburg on seven cases—J. R. McDonald & Co.	M. 11.60	
Receiving, cartage, and shipping—J. R. McDonald & Co.	26.45	
Commission—J. R. McDonald & Co.	10.50	
Freight to San Francisco—J. R. McDonald & Co.	102.50	
	<u>M. 151.05</u>	36 63
Expressage—Patterson & Co.		19 18
Seven thousand three hundred cubic feet gas—Oakland Gas Co.		18 25
Bill of E. de Haën, in marks; total in dollars and cents:		
One cask ammon chlorat	M. 37.10	
One cask ammon carbonic	35.00	
One cask ferrum sulfurat	26.40	
Twenty kr. sulfur sublim	5.20	
Twenty kr. sulfur ruffiat	3.60	
Five kr. slamum metall, ground	17.50	
Ten kr. kali chloric pur cey	13.00	
Twenty-five kr. mang. peroxyd	15.00	
Ten kr. mang. peroxyd	5.50	
One hundred cys. zinc metall, ground .....	.25	
Twenty kr. cale chlorat siec cand	6.00	
Five kr. kali firmary ciro	8.75	
Twenty kr. nitr caust pur ibac	24.00	
Ten kr. nitr caust pur alcohol def	30.00	
Twenty kr. kali caust pur ibac	30.00	
Five kr. kali caust pur alcach def	15.00	
Ten kr. ammon aitrisc cristpere	11.50	
Ten kr. arsenic metallic	10.00	
Ten kr. acid arsenicos	3.40	
Twenty kr. calcium fleo	2.20	
Five kr. kalmice bromat	16.60	
Two kr. kalmice jodative	50.00	
Five kr. antimon metall	7.50	
Five kr. tartar stibat cryst	12.50	
One half kr. magnes metall hand	24.00	
Twenty kr. magnes sulfuric pur	3.00	
Five kr. buymn chlorat pur	2.60	
One kr. yoduce resublim	30.00	
One case acid acetic, pure	48.00	
Ten kr. natr bicarb puriss	6.00	
Twenty kr. natr carbon anty	3.60	
Twenty kr. natr bochromac tasto	17.20	
One kr. bismuth metallic anf	20.00	
One kr. bismuth carbonic anf	18.75	
One kr. subatric pur	16.00	
Twelve and one half kr. capr sulfur techn	7.50	
One kr. lacmus No. 1	3.20	
Twenty kr. plumb oxydat technic	9.20	
Two kr. plumb oxydat mass	1.20	
One kr. plumb oxydat memm .....	.60	

Five kr. plumb peroxydat fur	M.14.00
Three kr. hydr oxydat rubr pp.	24.00
Five kr. plumb carbonic pur	12.50
Five kr. stibium chlorat cryst	22.50
Ten kr. staunum chlorat cryst	15.00
Five kr. hydr bichloral coross subl	30.00
Three kr. cupe carbonic pur	6.90
Five plumb cistric	5.00
One kr. cadmium carbonic puriss	14.00
One kr. caboltucee carbonic	18.00
One kr. nieedum carbonic	4.25
Two kr. nieedum chloratum	6.40
Five kr. nieedum sulfuric ammon	7.00
Ten kr. ferr sesquichlorat crist	5.60
Ten kr. natr acetic pur	6.50
One half kr. chromine metallic	7.00
Fifty gr. selemim	9.00
One kr. cadmium	5.50
Five kr. phosphar mang	21.00
Five kr. phosphar amorph	30.00
One kr. natrium metallic	13.00
One half kr. calcium metallic	57.50
Casing	94.60
Consul's certificate	12.60

M.1,042.50	\$250 00
One carboy nitric acid—Garden City Chemical Works	10 43
One carboy muriatic acid—Garden City Chemical Works	5 04
Two carboys muriatic acid—Garden City Chemical Works	12 80
Insurance—Canton Insurance Co.	41 81
Five tins caustic soda	5 00
One copper distilling apparatus—Eimer & Amend	25 00
Three hundred and twenty-two pounds aqua ammonia—San Francisco Gas Co.	25 75
Expressage—Patterson & Co.	5 50
Seven thousand nine hundred cubic feet gas—Oakland Gas Co.	19 75
Customs fees seven cases chemicals—G. W. Reed	4 00
State toll on goods from Hamburg—William Wolff & Co.	10
Freight—Southern Pacific Co.	3 70
Expressage—Patterson & Co.	5 00
Two hundred gallons Extra Star oil—Whittier, Fuller & Co.	52 00

Bill of Franz Schilling, in marks; total in dollars and cents:	Marks.
Sixty-six stg. retorten, 500 gr.	25.08
Fifty stg. T roteren diverse	7.50
Thirty-four stg. retorten, 500 gr.	12.92
Fifty-eight stg. retorten, 250 gr.	17.40
Forty-two stg. retorten, 250 gr.	12.60
One hundred and five stg. retorten, 60 gr.	18.90
Forty stg. retorten, 100 gr.	8.00
One hundred and five stg. rochflaschen, 1,000 gr.	26.25
One hundred and ten stg. rochflaschen, 60 gr.	6.05
Twelve stg. fraklonspollen, 15 gr.	1.44
Ten stg. fraklonspollen, 30 gr.	1.40
Eleven stg. fraklonspollen, 60 gr.	1.76
Ten stg. fraklonspollen, 100 gr.	2.00
Eleven stg. fraklonspollen, 250 gr.	3.85
Ten stg. fraklonspollen, 500 gr.	5.20
Ten stg. fraklonspollen, 750 gr.	6.50
Twelve stg. fraklonspollen, 1,000 gr.	9.00
One thousand stg. reagirglaser	20.00
One hundred stg. reagirglaser	3.00
Two hundred stg. reagirglaser	4.40
One thousand stg. reagirglaser	18.00
Fifty stg. reagirglaser	1.75
Fifty stg. praparetenglsier .....	.60
Fifty stg. praparetenglsier .....	.75
Fifty stg. praparetenglsier	1.00
Fifty stg. praparetenglsier	1.40
Sixteen stg. frichter, 25 cm.	15.20
Fifteen stg. frichter, 21 cm.	6.75
Ten stg. frichter, 5 cm.	7.00
One hundred stg. kochplerchen, 500 gr.	18.00
One hundred and ten stg. kochplerchen, 100 gr.	6.60
One hundred and ten stg. kochplerchen, 30 gr.	5.50
Seventy-five stg. kugchihren schmerchn	15.00
One hundred stg. kochflaschen, 250 gr.	10.00
Six stg. sicherheitsrohren	3.00
Twelve stg. sicherheitsrohren	3.00

Twelve stg. sicherheitsrohren	M.3.00
Twenty-six stg. sicherheitsrohren	4.68
Twenty-six stg. sicherheitsrohren	3.90
Six stg. sicherheitsrohren	2.10
Four stg. spritzflaschen, 500 gr.	4.00
One stg. spritzflaschen, 1,000 gr.	1.75
Fifty stg. kugelrohren m. 2 kugeln	15.00
Twenty-five stg. kugelrohren m. 1 kugeln	5.00
Five stg. trichter, No. 248	2.25
Twenty-six stg. trichter, No. 624	6.50
Two hundred and fifteen stg. trichter, No. 624	21.50
Two stg. cylinder m. Kropf .....	.84
One stg. cylinder m. Kropf .....	.40
One stg. cylinder m. Kropf .....	.52
One stg. cylinder m. Kropf .....	.62
Fifty stg. trichter, No. 624	3.00
Twenty-two stg. trichter, No. 624	7.92
Fifty-five stg. trichter, No. 624	11.00
One hundred and five stg. trichter, No. 624	8.40
Fifteen stg. retorten m. sdf, 2,000 gr., No. 629	12.00
Ten stg. retorten, m. sdf, 1,000 gr., No. 629	5.50
Two hundred stg. trichter, No. 624	27.00
Six stg. trichter, No. 664	6.00
One stg. reagierglasergestell kirschl	1.00
One stg. reagierglasergestell kirschl	1.20
One stg. reagierglasergestell mahagoniholz	1.50
One stg. reagierglasergestell mahagoniholz	2.00
One hundred and eight stg. kochflaschen, 200 gr.	9.72
Thirty stg. retorten, 100 gr.	16.50
One hundred stg. Hoffmeister's schalschen	5.00
One hundred stg. glasthreinen	1.80
Forty stg. kochflaschen, 200 gr.	19.20
Twenty stg. retorten, 100 gr.	4.00
Ten stg. Woulfsche flaschen, 150 gr.	4.25
Twenty-five stg. Woulfsche flaschen, 200 gr.	11.25
Twenty-five stg. Woulfsche flaschen, 250 gr.	12.50
Ten stg. Woulfsche flaschen, 500 gr.	7.00
Six stg. Woulfsche flaschen, 1,000 gr.	5.40
Two stg. Woulfsche flaschen, 1,500 gr.	2.60
Two stg. Woulfsche flaschen, 2,000 gr.	3.00
Two stg. Woulfsche flaschen, 150 gr. ....	.80
Two stg. Woulfsche flaschen, 200 gr. ....	.80
Two stg. Woulfsche flaschen, 250 gr. ....	.80
Two stg. Woulfsche flaschen, 500 gr.	1.20
Three stg. Woulfsche flaschen	2.40
Two stg. Woulfsche flaschen	2.40
Two stg. Woulfsche flaschen	3.00
Eight stg. adklarflaschen, 2,000 gr.	8.80
Three stg. cylinder m. Rand	1.80
Two stg. cylinder m. Rand .....	.40
Two stg. cylinder m. Rand .....	.36
Forty-six stg. rollflaschen mit	30.36
Thirty-two stg. retorten, No. 629	17.60
Twelve stg. messkolben ohne, 200 cc.	4.20
Twenty-two stg. messkolben ohne, 25 cc.	3.30
Twenty-two stg. messkolben ohne, 20 cc.	3.30
Twenty stg. messkolben ohne, 10 cc.	2.00
Twelve stg. messkolben ohne, 5 cc.	1.20
Four stg. messkolben ohne	1.20
Sixty-two stg. rollflaschen in gen, 1,000 gr.	23.66
Twenty-five stg. kochflaschen, 3,000 gr.	18.75
Twenty-four stg. apparate, No. 359	24.00
Fifty stg. filtrirflaschen, 750 gr.	35.00
Twelve stg. filtrirflaschen, 1,000 gr.	9.00
Nine stg. filtrirflaschen, 2,000 gr.	9.90
One stg. mischcylinder, 500 cc.	2.00
One stg. mischcylinder, 1,000 cc.	3.20
One stg. mischcylinder, 2,000 cc.	5.30
Ten stg. kochflaschen, 2,000 gr.	4.80
Two stg. kochflaschen, 4,000 gr.	1.68
Twenty-five stg. trichter, 5 cm.	1.75
Thirty-five stg. trichter, 7 cm.	2.80
Fifty-six stg. trichter, 8 cm.	5.60
Thirty-five stg. trichter, 10 cm.	4.72
Twenty stg. trichter, 13 cm.	4.00
Thirty salz. becherglaser, No. 1-5	22.50
Twenty-four stg. kochflaschen, 4,000 gr.	20.16

Ten stg. wageglaschen, No. 722, 10 gr.	M.2.80
Twenty-two stg. wageglaschen, No. 722, 20 gr.	6.60
Twelve stg. wageglaschen, No. 722, 30 gr.	4.20
Six stg. wageglaschen, No. 722, 50 gr.	2.40
Seven stg. wageglaschen, No. 720	2.80
Five stg. messkolben mit stopsel, 100 cc.	1.50
Six stg. messkolben mit stopsel, 125 cc.	2.40
Three stg. messkolben mit stopsel, 250 cc.	2.10
Five stg. messkolben ohne, 250 cc.	2.25
Three stg. messkolben ohne	1.20
Ten stg. retorten, 100 gr.	2.00
Fifty-two ko. massive stabe	52.00
Thirty-one stg. rollflaschen in gen stpe, 500 gr.	8.37
Two stg. rollflaschen in gen stpe, 1,000 gr. ....	.78
Six stg. filtrirflaschen stark glase, 1,600 gr.	4.80
Fifty-six stg. filtrirflaschen, 750 gr.	28.00
Twelve stg. filtrirflaschen, 500 gr.	4.80
Fifty-one stg. filtrirflaschen stark in glase, 1,000 gr.	30.60
One stg. scheidertrichter, 2 str.	3.00
One stg. scheidertrichter, 3 str.	4.00
Two stg. apparate kipp gross	11.00
One stg. cylinder, 1,000 cc.	2.70
One stg. cylinder, 2,000 cc.	4.50
One stg. cylinder, 10 cc. ....	.45
Eighteen stg. vollpipetten, 1 cc.	1.80
Fifteen stg. vollpipetten, 2 cc.	1.80
Six stg. vollpipetten, 3 cc. ....	.84
Six stg. vollpipetten, 4 cc. ....	.90
Six stg. vollpipetten, 5 cc. ....	.90
Twelve stg. vollpipetten, 10 cc.	2.16
Six stg. vollpipetten, 15 cc.	1.20
Five stg. vollpipetten, 20 cc.	1.25
Twelve stg. vollpipetten, 25 cc.	3.60
Six stg. vollpipetten, 30 cc.	2.10
Six stg. vollpipetten, 40 cc.	2.40
Six stg. vollpipetten, 50 cc.	2.40
Three stg. vollpipetten, 75 cc.	1.27
Three stg. vollpipetten, 100 cc.	1.50
Three stg. vollpipetten, 150 cc.	1.71
Three stg. vollpipetten, 200 cc.	2.25
Two stg. gasmaschfluschen, 500 gr.	2.50
Three stg. gasmaschfluschen, 250 gr.	3.90
Three stg. gasmaschfluschen, 300 gr.	3.80
One stg. apparate incl pappkiote, No. 365	2.15
One stg. apparate incl pappkiote, No. 368	1.10
One stg. Universal araometer	2.00
One stg. araometer .....	.55
One stg. araometer .....	.65
Three stg. futterale .....	.80
One stg. graunnflasche m. thermon, 50 gr.	2.50
Ten stg. burettenschroimmer	4.75
One stg. scheidertrichter cylinderf.	1.25
One stg. scheidertrichter kugelf.	1.25
One stg. burette ohne Hahn, 25 cc. ....	.70
Three stg. burette ohne Hahn, 50½ cc.	3.90
Two stg. burette ohne Hahn, 70½ cc.	4.40
One satz burette ohne mit fuss	5.00
One satz burette ohne mit fuss	7.00
Six s. messkolben, 50 ccm.	1.20
Four s. messkolben, 500 ccm.	2.40
Five s. messkolben, 1,000 ccm.	4.00
Six s. messkolben, 1,000 ccm. mit stg.	6.80
Fifty s. sthrglaser, 2 cm.	3.50
Fifty s. sthrglaser, 3 cm.	4.00
One hundred s. sthrglaser, 4 cm.	10.00
One hundred and five s. sthrglaser, 5 cm.	12.60
One hundred s. sthrglaser, 7 cm.	15.00
Fifty s. sthrglaser, 9 cm.	10.00
Twenty-five s. sthrglaser, 12 cm.	7.50
Ten s. sthrglaser, 15 cm.	5.00
Six s. sthrglaser, 18 cm.	4.20
Four s. sthrglaser, 20 cm.	3.20
Three s. sthrglaser, 26 cm.	5.85
One satz Hoffmann'sche apparate	15.00
One str. Hoffmann'sche apparate	7.50
One str. fudiometer	3.00

One str. burette, 50 $\frac{1}{2}$ cc.	M. 2.00
One satz Hoffmann'sche apparate	20.00
One stp. Hoffmann'sche apparate	9.00
One stp. Hoffmann'sche apparate	8.50
Twenty-five satze becherglaser, Nos. 1-8	37.50
Fifty ko. schrver schmelzbare rohren	140.00
Twenty satze becherglaser, Nos. 1-12	60.00
Eleven satze becherglaser, Nos. 1-8	18.50
Six satze becherglaser, Nos. 1-16	28.50
Thirty-one satze becherglaser, Nos. 1-10	62.00
Four satze becherglaser, Nos. 1-16	19.00
Nineteen satz becherglaser, Nos. 1-10	38.00
Thirty satze becherglaser, Nos. 1-8	45.00
Thirty sts. retorten mit stpe, 1,000 gr.	18.60
Thirteen sts. retorten mit stpe, 2,000 gr.	10.40
Thirty-five sts. retorten mit stpe, 200 gr.	9.45
Thirty-six satze becherglaser, Nos. 1-8	54.00
Seventy satze becherglaser, Nos. 1-5	52.50
One hundred and seventy satze becherglaser, Nos. 1-8	64.60
Nine stg. acklarflaschen, 1,000 gr.	6.75
Eleven stg. exikatoren	19.80
Eighteen stg. vorstosse die form, 20 cm. lg.	7.20
Fourteen stg. vorstosse die form, 30 cm. lg.	7.00
Fourteen stg. vorstosse die form, 40 cm. lg.	8.40
Eight stg. rollflaschen m. dekelote, 600 gr.	2.80
Thirty-five satze becherglaser, Nos. 1-3	13.80
Seventy stg. retorten, 200 gr.	18.00
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	3.60
One stg. gaspipette n. himpelary stativ	3.60
One stg. gaspipette n. himpelary stativ	7.75
One stg. gaspipette n. himpelary stativ	6.75
One stg. gaspipette n. himpelary stativ	2.85
One stg. gaspipette n. himpelary stativ	4.60
One stg. gaspipette n. himpelary stativ	5.75
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	3.00
Thirty-two stf. retorten m. stf, 100 gr.	6.40
Betrag der verpackungskosten, etc.	372.70
Beglaucigungskosten	12.10

Bruttocetrag der factura M. 2,447.55

\$588 $\frac{53}{100}$

Bill of Warmbrunn, Quilitz & Co., in marks; total in dollars and cents: Marks.	
Two thousand sheets white German filtering paper	108.75
Eighteen thousand sheets round filters	173.20
Three thousand sheets round filters	6.70
Four hundred sheets round filters	5.65
Five hundred sheets white filtering paper	7.50
Eleven thousand sheets white round filters	72.50
Three thousand sheets white round filters	26.60
Ten thousand five hundred sheets white round filters	30.25
One thousand five hundred sheets yellow round filters	6.00
Two hundred cracking wals, thin	10.00
Fifty cracking wals, strong	4.00
Five sets corkcovers, of cress	13.75
Two sets corkcovers, of cress	13.20
One set corkcovers, of steel	11.00
Two sets corkcovers, japanned tin plate	5.50
One Bunsen's universal support, complete	28.80
Universal support, on iron tripod	97.60
Universal support, on square form	38.35
Evaporating dishes, porcelain	47.50
Evaporating dishes, porcelain	16.75
Evaporating dishes, porcelain, common	12.45
Evaporating dishes, porcelain, glassform	31.75
Porcelain drying vessels	14.40

Discount M. 792.20
28.70

Freight and packing M. 768.50
25.80
Consular certificate 10.70

M. 800.00

194 00

Bill of E. Merck, in marks; total in dollars and cents:	Marks.
Five kilograms acid nitric, fuming.....	8.00
Forty kilograms acid hydrochloric, pure.....	20.00
Ten kilograms acidum hydrochloric, pure.....	5.00
Ten kilograms acidum hydrochloric, pure.....	10.00
One kilogram acid hydrosilico fluoric.....	16.00
Ten kilograms acid sulphuric.....	10.00
Five kilograms acid sulphuric, fuming.....	7.00
Five kilograms alcohol, absolute pure.....	12.00
One kilogram ethce, c.p.....	2.00
One thousand and ninety-four kilograms sulphuric acid.....	19.69
Five kilograms acid acetic, c.p. conc.....	10.00
Ten grams acid carminic.....	3.00
Five hundred grams acid chromic.....	4.00
Five hundred grams acid molybdic.....	4.00
One hundred grams acid molybdic, free.....	1.60
One hundred grams acid pyrogassic.....	3.00
Two kilograms acid tartaric.....	9.00
Ten kilograms ammonia carbonate.....	16.00
Five kilograms ammonia chloride.....	6.00
One half kilogram ammonia fluoric.....	9.00
One hundred grams ammonia molybdate.....	1.20
One half kilogram ammonia nitrate.....	1.40
One half kilogram ammonia oxatate.....	3.25
One kilogram ammonia sulphate.....	2.00
One half kilogram barium acetate.....	2.50
Two kilograms barium carbonate.....	16.00
Two kilograms barium chloride.....	10.00
One half kilogram barium hydrate.....	1.00
One half kilogram barium nitrate.....	1.00
One half kilogram calcium oriac.....	27.00
One half kilogram calcium sulphate.....	2.75
One half kilogram copper mebasic.....	8.00
One hundred grams hydroxylamine hydrochlor.....	8.00
One half kilogram fron sesquichloride.....	1.80
One half kilogram fron sulphate oxydul.....	.80
Five kilograms fron sulphiac sticks.....	4.00
One kilogram fron ammonia.....	4.50
One kilogram lead acetate.....	1.40
Two kilograms lead chromate.....	16.00
One kilogram lead oxide.....	4.00
One kilogram hagwesium chlorice.....	8.00
One half kilogram hagwesium oxyac, free.....	12.00
One kilogram hagwesium sulphate.....	1.60
One half kilogram mercury bichloride.....	4.50
One half kilogram mercury nitrate.....	4.00
One half kilogram mercury oxide.....	11.00
One kilogram copper sulphate.....	1.40
Two sheets litmus paper, red.....	.20
Two sheets litmus paper, yellow.....	.20
Ten grams platinum chlorice.....	14.00
Two kilograms potassium bichromate.....	4.80
One kilogram potassium bisulphate.....	2.40
One half kilogram potassium bromate.....	11.00
Two kilograms potassium carbonate.....	4.40
One kilogram potassium chlorate.....	2.00
One half kilogram potassium chromate.....	1.80
One kilogram potassium cyanide.....	21.00
One half kilogram potassium ferri cyanide.....	4.00
One half kilogram potassium ferro cyanide.....	1.80
Five kilograms potassium hydroxide.....	50.00
Two kilograms potassium hydroxide, sticks.....	8.00
One half kilogram potassium iodiac.....	18.00
Two kilograms potassium nitrate.....	3.00
One half kilogram potassium nitrite.....	3.50
One half kilogram potassium permanganate.....	6.00
One half kilogram potassium sulphate.....	.80
One quarter kilogram potassium rhodanate.....	1.88
Twenty grams silver metallic.....	6.00
Fifty grams silver nitrate.....	7.00
One kilogram sodium acetate.....	1.60
One kilogram sodium bicorate.....	2.60
One kilogram sodium bicarbonate.....	1.25
One half kilogram sodium bisulphate.....	1.00
One half kilogram sodium bisulphite.....	6.00
Five kilograms sodium carbonate crist.....	6.00

One kilogram sodium carbonate crist, dry	M.2.50
One kilogram sodium chloride	6.00
Two kilograms sodium nitrate	2.50
One half kilogram sodium hydroxide	10.00
Two kilograms sodium hydroxide, pure	3.80
One half kilogram sodium nitrate	2.00
Two kilograms sodium bhyosulphate	2.00
One half kilogram sodium nosframete	1.88
Two kilograms sodium and ammonia	9.00
One half kilogram tin chloride	1.50
One fourth kilogram uranium nitrate	12.50
One kilogram zinc metallic, c. p. sticks	6.00
One kilogram zinc metallic	2.50
One collection of alkaloids, 52 specimens	80.00
One collection of glucosides, 72 specimens	100.00
One collection physiological preparation	75.00
Ten grains lacmoid, c. p. y. scales	1.25
Five hundred grams lacmus com't	.65
Two hundred grams phenolylhbalcinc	16.00
One hundred grams methylorange	1.60
One hundred grams tropaclin	2.50
Fifty sheets Gilmn's paper, red	2.00
Fifty sheets Gilmn's paper, blue	2.00
One hundred sheets furmeric paper	4.00
Fifty sheets congo paper	2.00
Thirty grams sulphanicilic acid	1.20
Twenty grams naphthy'lamine	.60
Two hundred grams diphenylamine	4.00
Two kilograms parchment paper	4.40
Packing and shipping charges	34.80
One hundred and four colored bottles	53.45
One jar	1.90
Consular fees	10.70

M.974.15

\$236 23

Freight and charges—J. R. McDonald & Co.

102 58

Bill of Robert Muencke, in marks; total in dollars and cents:	Marks.
One thousand runde filter 595, 5 $\frac{1}{2}$ cm.	2.50
Two thousand runde filter 595, 7 cm.	5.30
Five thousand runde filter 595, 9 cm.	19.75
Ten thousand runde filter 595, 11 cm.	45.00
Ten thousand runde filter 595, 12 $\frac{1}{2}$ cm.	50.00
Five thousand runde filter 595, 15 cm.	35.50
One thousand runde filter 595, 18 $\frac{1}{2}$ cm.	8.70
One thousand runde filter 595, 24 cm.	15.75
One thousand runde filter 595, 27 cm.	22.00
Five hundred runde filter 595, 32 cm.	13.40
Five hundred runde filter 595, 38 $\frac{1}{2}$ cm.	15.75
One thousand runde filter 597, 5 $\frac{1}{2}$ cm.	3.80
Two thousand runde filter 597, 7 cm.	8.00
Five thousand runde filter 597, 9 cm.	29.00
Ten thousand runde filter 597, 11 cm.	71.00
Ten thousand runde filter 597, 12 $\frac{1}{2}$ cm.	74.00
Five thousand runde filter 597, 15 cm.	47.50
One thousand runde filter 597, 18 cm.	12.60
One thousand runde filter 597, 24 cm.	18.90
One thousand runde filter 597, 27 cm.	25.00
Five hundred runde filter 597, 32 cm.	15.25
Five hundred runde filter 597, 38 $\frac{1}{2}$ cm.	20.00
Five hundred runde filter 597, 50 cm.	33.00
One thousand runde filter 589, 5 $\frac{1}{2}$ cm.	15.00
One thousand runde filter 589, 7 cm.	16.00
Five hundred runde filter 589, 11 cm.	24.00
Two hundred runde filter 589, 12 $\frac{1}{2}$ cm.	14.50
One thousand runde filter 589, 9 cm.	6.40
One hundred runde filter 589, 15 cm.	3.80
One thousand runde filter 590, 5 $\frac{1}{2}$ cm.	18.00
One thousand runde filter 590, 7 cm.	20.00
One thousand runde filter 590, 9 cm.	30.00
Five hundred runde filter 590, 11 cm.	18.00
Two hundred runde filter 590, 12 $\frac{1}{2}$ cm.	8.00
One hundred runde filter 590, 15 cm.	4.80
One thousand falsenfilser 588, 12 $\frac{1}{2}$ cm.	13.50
One thousand falsenfilser 588, 18 $\frac{1}{2}$ cm.	18.00
Five hundred falsenfilser 588, 24 cm.	14.80
Five hundred falsenfilser 588, 32 cm.	20.80

Three hundred falsenfilser 588, 38½ cm.	M.15.90
Two hundred falsenfilser 584, 24 cm.	8.00
Two hundred falsenfilser, 28 cm.	12.00
Two hundred falsenfilser, 32 cm.	15.60
One hundred falsenfilser, 38½ cm.	10.80
One hundred falsenfilser, 50 cm.	12.00
Three hundred felsvinpapier, 598	54.00
Five hundred felsvinpapier, 591	75.00
One thousand felsvinpapier, 58-58, I	67.50
Two rollen felsvinpapier, 566	25.00
Two thousand bog. felsvinpapier, 58-58, II	84.00
One chlorenswicklungs app., 1 lsr.	3.75
Two joichser, m. kgl., 10 cm.	1.00
Two joichser, 12 cm.	1.20
Two joichser, 14 cm.	2.00
Two joichser, 16 cm.	2.40
Two joichser, 18 cm.	3.20
Twenty-two joichser gerrips, 11 sorsen	8.40
One messflachen, 100	.90
One messflachen, 250	1.30
One messflachen, 500	1.80
One messflachen, 1,000	2.30
One exsiccasor ohne Hahn	3.75
One exsiccasor mit Hahn	6.00
One exsiccasor mit Hahn	8.50
Two filtrirkolben, 100 cc.	.80
Two filtrirkolben, 250 cc.	.80
Two filtrirkolben, 500 cc.	1.00
Two filtrirkolben, 750 cc.	1.10
Two filtrirkolben, 1,000 cc.	1.20
Two filtrirkolben, 2,000 cc.	2.60
Two filtrirkolben, 200 cc.	1.40
Two filtrirkolben, 250 cc.	1.60
Two filtrirkolben, 500 cc.	1.80
Two filtrirkolben, 750 cc.	1.90
Two filtrirkolben, 1,000 cc.	2.00
One vorlage m. 2 tub, 1 lsr.	2.00
One vorlage m. 2 tub, 2 lsr.	2.50
One vorlage m. 2 tub, 3 lsr.	3.50
One vorlage m. 2 tub, 5 lsr.	4.50
One vorlage m. 2 tub, ½ lsr.	1.25
One vorlage m. 2 tub, ¼ lsr.	1.50
One vorlage m. 2 tub, 1 lsr.	2.00
One vorlage m. 2 tub, 2 lsr.	2.50
One vorlage m. 2 tub, 4 lsr.	3.80
One vorlage m. 2 tub, ½ lsr.	1.50
One vorlage m. 2 tub, ¼ lsr.	2.00
One vorlage m. 2 tub, 1 lsr.	2.50
One vorlage m. 2 tub, 2 lsr.	3.80
One vorlage m. 2 tub, 4 lsr.	4.50
Ten sasf. becherglaser, 1-5 yolg.	10.00
Five sasf. becherglaser, 1-8 yolg.	9.00
One sasf. becherglaser, 1-10 yolg.	3.00
One sasf. becherglaser, 1-12 yolg.	4.00
One sasf. becherglaser, 1-16 yolg.	7.00
Five sasf. becherglaser kaliglas, 1-8.	14.00
Two sasf. becherglaser kaliglas, 1-10	10.00
One sasf. becherglaser kaliglas, 1-12	6.10
Five sasf. becherglaser hohe form, 1-8	20.25
One chlorentwicklungs apparas thon, 2 lsr.	3.50
One chlorentwicklungs apparas thon, 4 lsr.	5.50
One glaskassen, 180-105 mm.	1.10
One glaskassen, 235-185 mm.	2.50
One glaskassen, 210-155 mm.	2.00
One glaskassen, 315-235 mm.	4.95
One glaskassen, 365-315 mm.	7.70
One glaskassen, 420-315 mm.	11.00
One glaskassen, 50-25-25 cr.	.60
One glaskassen, 200-120-120	3.50
One glaskassen, 300-200-150	10.50
One absorptionsgefass, 15 cm.	.75
One absorptionsgefass, 20 cm.	1.00
One absorptionsgefass, 30 cm.	2.00
One araometer	8.50
One satz normal araometer	50.00
One satz araometer	15.00

One half kg. asbess	M.8.00
Four burssen	1.00
One burssen	.75
One burssen	1.00
Four hundred glasperlen	2.00
One dialysator	3.50
One gasentwicklungsapp	10.50
One salz gervichse	13.75
One stocke mis glashahn	7.50
Two gluhschilfchen, 0	.70
Two gluhschilfchen, 1	.50
Two gluhschilfchen, 2	.50
Two gluhschilfchen, 3	.50
Two gluhschilfchen, 4	.50
One pracionshahn	10.00
Five queschhahne A, 4 cm.	1.10
Five queschhahne A, 5 cm.	1.25
Five queschhahne A, 6 cm.	1.50
Five queschhahne A, 7-5 cm.	1.75
One queschhahne B, 4 cm.	.85
Two queschhahne B, 5 cm.	.76
One queschhahne B, 6 cm.	.40
One queschhahne B, 7½ cm.	.45
Five queschhahne C, 7-5	1.25
Two queschhahne, D	.90
Two queschhahne, E	.90
Two queschhahne, F	1.90
Two queschhahne, G	.90
Two queschhahne, H	.40
Two queschhahne, F	.80
One queschhahne K, 28 mm.	.80
One queschhahne K, 30 mm.	.95
One queschhahne K, 35 mm.	1.10
Two queschhahne L	1.50
One queschhahne F, 40 mm.	.90
One queschhahne F, 45 mm.	1.00
One queschhahne K, 40 mm.	1.20
One queschhahne muencke	1.25
Ten halser	3.00
One halser	1.00
Two rundkolben	8.00
One sasy korkcohrer, 1-12	6.00
One korkprusse	2.00
Five flache drahlnessy kuppen	1.50
Three flache drahlnessy kuppen	1.50
One flache drahlnessy kuppen	1.00
One loffel eisen m. spuselssiel, 12.5 cm.	.60
One loffel m. spuselssiel, 20 cm.	.95
One lupe m. 3 linsen	3.00
One lupe, 33 mm.	4.00
One lupe, 2 linsen	4.50
Ten buessen qems	2.50
One ripessenbrager	4.50
One hundred gr. magnesium pulverform	15.00
Five karkmesser	5.00
Five glasmesser	5.00
One scalpell klein	1.10
One scalpell missel	1.25
One scalpell grass	1.40
One scalpell sweischneidg	1.50
One mesallsamlung	44.00
One achasmorser	24.00
One glasmorser, 10 cm.	1.00
One glasmorser, 16.5 cm.	1.85
One morser n. pory, No. 1	.50
One morser n. pory, No. 3	.90
One morser n. pory, No. 5	1.20
One morser n. pory, No. 7	1.75
One morser n. pory, No. 11	2.95
One morser glasiol, No. 00	.55
One morser glasiol, No. 0	.80
One morser glasiol, No. 1	.75
One morser glasiol, No. 3	1.20
One morser glasiol, No. 5	1.65
One pincesse n. nickel	2.25
One dobereiner fund maschine	6.00

One pory plasse	M.0.35
One pory plasse, 8.5 cm. ....	.35
One pory plasse, 10 cm. ....	.35
Two pory plasse, 14 cm.	1.00
One pory plasse, 20.3-14.5	3.00
One plasse	2.00
Two buch reagentien	2.00
Two sammelgefasse	6.00
Five zangen n. mess vern	12.50
Two zangen n. neusilber	4.50
One zangen n. nickel	4.00
Ten kgl. pory tiegel ohne deckel, No. 000	1.20
Twenty kgl. pory tiegel ohne deckel, No. 00	5.00
Twenty kgl. pory tiegel ohne deckel, No. 0	7.00
Twenty kgl. pory tiegel ohne deckel, No. 1	8.00
Ten kgl. pory tiegel ohne deckel, No. 2	6.00
Three kgl. pory tiegel ohne deckel, No. 3	2.40
Two kgl. pory tiegel ohne deckel, No. 4	1.70
One kgl. pory tiegel ohne deckel, No. 5	1.05
Five shmelysiegel, No. 3	1.75
Five shmelysiegel, No. 4	2.00
Five shmelysiegel, No. 5	2.50
One shmelysiegel bisinglsony .....	.30
One shmelysiegel bisinglsony .....	.35
One shmelysiegel bisinglsony .....	.45
One shmelysiegel bisinglsony .....	.55
One shmelysiegel bisinglsony .....	.75
One shmelysiegel bisinglsony .....	.80
One untersalzschaale glass, No. 2 .....	.30
Two untersalzschaale glass, No. 1 .....	.48
Two untersalzschaale glass, No. 0 .....	.36
One untersalzschaale glass, No. 2 .....	.45
Two untersalzschaale glass, No. 1 .....	.70
Two untersalzschaale glass, No. 0 .....	.60
Three satz pory kinge glasiol	7.50
Four hundred gr. wrot rose metall	7.20
One coml fänge	2.25
Five kg. zink arsenfric	8.75
One half kg. zink chem rein pulver	5.00
One half kg. zink chem rein ssaben	4.25
One kg. zink chem rein	8.50
One half kg. zink abs chem rein	11.00
Ten kg. vesslifse abs	3.00
Three feilen, 6 cm.	1.50
Three feilen, 8 cm.	2.25
Two feilen, 10 cm.	1.80
Two feilen, 16 cm.	2.40
Three feilen, 6 cm. ....	.90
Two feilen, 10 cm. ....	.80
Four feilen, 16 cm.	2.40
One feilen, 20 cm.	1.00
Two feilen, 8 cm. ....	.80
Two feilen, 10 cm.	1.00
One feilen, 12 cm. ....	.50
Four feilen, 12 cm.	2.00
One feilen, 16 cm. ....	.70
Ninety glasplassen, 100 mm. in 6 furbins	31.50
Three glasplassen, 200 mm. rosh	3.60
Two glasplassen, 200 mm. orange	2.40
One glasplassen, 200 mm. gelc	1.20
Two kohren kalumm nasimum .....	.35
Four absorpsions rohren, 10 cm.	6.00
Three absorpsions rohren, 15 cm.	7.50
Two absorpsions rohren, 20 cm.	6.00
One absorpsions rohren, mit furt	5.00
One absorpsions rohren m. hahnssospen	4.50
One absorpsionsgefais	3.50
One absorpsionsgefais	3.00
One kl. absorpsions schlange	1.25
One destellations rohr	4.00
One destellations rohr	5.00
One extractions apparat, 250 cc.	3.20
One extractions apparat, 1,000 cc.	5.00
One filtrirsohm, A .....	.40
One filtrirsohm, B .....	.40
One gaswaschflasch	1.50

One dreirveyhahn.....	M.2.75
One heber, 50 cm.	1.50
Three kohelensaure apparuse	6.00
One kohelensaure apparuse	4.00
One kohelensaure apparuse	2.00
One kohelensaure apparuse	5.00
Two kohelensaure apparuse	2.50
One kohelensaure apparuse	6.00
One kohelensaure apparuse	6.00
Five kolben cirnformig	1.75
Three kolben cirnformig	1.20
Two kolben cirnformig	1.00
Two kolben cirnformig	1.40
Two appacase	2.90
One pyknometer	2.50
Two pyknometers	3.00
One pyknometer	1.75
One reagenskelch .....	.25
One reagenskelch .....	.30
One reagenskelch .....	.35
One reagenskelch .....	.40
One reagenskelch .....	.55
One reagenskelch .....	.75
Two reagenskelch .....	.70
Three reagenskelch	1.65
One reagenskelch .....	.50
One reagenskelch .....	.60
One reagenskelch .....	.75
Two reagenskelch	1.80
One reagenskelch .....	.30
One reagenskelch .....	.35
One reagenskelch .....	.40
One reagenskelch .....	.40
One reagenskelch .....	.90
One spiritzflaschen, 500 cc.	4.00
One spiritzflaschen, 750 cc.	4.25
Two spiritzflaschen, 750 cc.	4.50
Two spiritzflaschen, 500 cc.	4.00
One chem. thermometer	2.50
One chem. thermometer	3.00
One chem. thermometer	3.50
One chem. thermometer	5.00
One med. thermometer	2.75
One verschluptrichser	1.75
One verschluptrichser	2.50
One scheidetrichser	2.25
One scheidetrichser	3.00
One scheidetrichser	4.00
Three vorstosse grade	1.50
Two vorstosse grade	1.20
Two vorstosse geb .....	.90
Two vorstosse geb	1.00
One wageglaschen .....	.65
One wageglaschen	1.00
One wageglaschen .....	.60
One wageglaschen .....	.70
One wageglaschen .....	.90
One wageglaschen flach .....	.50
One wageglaschen flach .....	.60
One wageglaschen .....	.30
One wageglaschen .....	.45
One wageglaschen .....	.60
One wageglaschen .....	.45
One wageglaschen .....	.50
One wageglaschen .....	.60
One vegetationskasten	220.00
One dampsfrylinder, etc.	120.00
One kpfr kalen doppel wandig, etc.	92.50
One kronenbrenner	10.00
One half kg. glaskoner	1.50
One filtrirstatir	2.50
One kg. schlauct	25.00
One kg. schlauct	17.50
One gaslampe	5.25
One gaslampe	2.10
One gaslampe	4.20

One burettetry, etc.	M. 16.25
One vacuumeter	17.50
One reagerglas gestell	1.10
One reagerglas gestell	2.60
One hundred springkohlen	8.00
One kg. kl. glasperlen	4.50
One filtrirstatir, etc.	4.00
One filtrirstatir, etc.	2.50
One geblaselampe	12.00
One kuhler statir	4.00
One holz kuhler statir	5.00
One burssensreager, etc.	15.00
Two burssensreager, etc.	16.50
One burssensreager, etc.	9.25
One burssensreager, etc.	10.00
Two universalhulter	10.00
One stateo slas roh lack	1.10
One stateo slas roh lack	1.35
One stateo slas roh lack	1.80
One stateo slas roh lack	2.50
One stateo slas roh lack	4.30
One stateo slas roh lack	.90
One stateo slas roh lack	1.00
One stateo slas roh lack	1.10
One stateo slas roh lack	1.20
One stateo slas roh lack	1.60
One stateo slas roh lack	2.75
One stateo slas roh lack	3.90
One stateo slas roh lack	7.80
One stateo slas roh lack	2.50
One stateo slas roh lack	2.90
One stateo slas roh lack	3.40
One kl. mess gabel	1.25
One gr. mess gabel	1.50
Two gr. mess gabel	3.00
One yederrede klemme	2.00
One yederrede klemme	2.50
One doppelklemme	5.75
One voltameter	20.00
Three stative, etc.	15.00
One waudtapel, aufgezogen, No. 1	12.50
One waudtapel, aufgezogen, No. 2	12.50
One waudtapel, aufgezogen, No. 3	12.50
One waudtapel, aufgezogen, No. 4	12.50
One waudtapel, aufgezogen, No. 5	12.50
One waudtapel, aufgezogen, No. 6	12.50
One waudtapel, aufgezogen, No. 7	12.50
One waudtapel, aufgezogen, No. 8	12.50
One waudtapel, aufgezogen, No. 9	12.50
One waudtapel, aufgezogen, No. 10	12.50
One waudtapel, aufgezogen, No. 11	12.50
One waudtapel, aufgezogen, No. 12	12.50
One regulator	6.50
One schreibdiamant	3.00
One extractions apparat	5.50
Two kuhler, 25 cm.	2.50
Two kuhler, 40 cm.	3.50
One kuhler, 60 cm.	2.50
One kuhlapparat, etc.	7.50
Two platinspisyen	6.00
One burette, form D	6.00
One burette, form F	6.75
One burette kleinert	4.75
One burette, form N	3.75
One burette	6.50
Ten burrette n. chroiminer	7.50
Ten burrette n. decken	1.50
One manometer, etc.	6.75
Twenty-three gr. platinfole	69.00
Ten platinschramm	5.00
One vanne n. mess rohen	25.00
One geblase, No. 1	17.50
One geblase, No. 3	44.00
One thermometer	3.00
One thermometer	8.50
One thermometer	4.00

One thermoregulator	M.9.00
One stativ kaliapparatus	6.50
One kolben n. gusscisen	7.50
One rapidkocher	4.50
One rapidkocher	9.50
Ten gaslampen	16.00
One gaslampen	2.90
One gaslampen	2.50
Two gaslampen	5.00
Two gaslampen	6.00
One gaslampen	2.25
One gaslampen	2.75
Five aupsasye	1.25
One Meuncke lampe	4.50
One nickel loppel	1.10
One kohlensage	1.25
Two porose thonplatten, 9 cm. ....	.80
Two porose thonplatten, 12 cm. ....	.60
Two porose thonplatten, 20 cm.	1.50
One porose thonplatten, 25 cm.	1.10
One porose thonplatten, 30 cm.	1.50
One porose thonplatten, 35 cm.	3.00
One porose thonplatten, 40 cm.	4.50
One half kg. staniol	3.00
One klemme, K	2.50
One klemme, M	3.00
One klemme, O	4.75
One klemme, P	3.50
One klemme, Q	4.50
One klemme, R	5.00
One klemme, U	3.25
One klemme, D	2.75
One klemme, H	2.75
One federnde klemme klein	2.00
One federnde klemme klein	2.75
One doppelklemme	5.00
One doppelklemme	6.75
Seven doppelmutfen, 1, 117	6.30
Fourteen doppelmutfen	14.00
One wasserstrahlufspumpe, No. 8	2.75
One wasserstrahlufspumpe	3.25
One wasserstrahlufspumpe	8.50
One exsiccator	6.50
Two filtrirkolben	1.80
One kolbentrager, 15 cm.	2.50
One kolbentrager, 25 cm.	3.25
One kolbentrager, 40 cm.	4.80
One kolbentrager, 50 cm.	5.50
One kolbentrager, m. holzletter, 12 cm.	2.75
One kolbentrager, m. holzletter, 17 cm.	3.75
One kolbentrager, m. holzletter, 20 cm.	4.25
One microlampe	3.20
One luftpunpenletter	32.00
One luftpunpenletter	27.00
One kreufschulung, 10-8	1.25
One kreufschulung, 10-10	1.30
One kreufschulung, 10-8	1.40
One kreufschulung, 10-10	1.50
Five universalhalzer	24.75
One landbad, 40-20 cm.	15.00
One klemme, A	1.75
One klemme, B	1.60
One klemme, C	1.60
One klemme, I	2.25
One klemme, K	4.50
One klemme, L	2.75
One salz mess ringe	3.50
One salz mess ringe	3.50
Five salz eis ringe	6.50
Two salz mess ringe	4.00
Ten salz eis ringe	14.00
One salz mess ringe	2.20
One salz mess ringe	2.55
One salz mess ringe	3.20
One salz eis ringe	1.80
One flaschen pory, 125 cc.	1.05

One flaschen pory, 250 cc.....	M.1.20
One flaschen pory, 500 cc.....	1.50
One flaschen pory, 750 cc.....	1.80
One flaschen pory, 1,000 cc.....	2.25
One flaschen pory, 1,500 cc.....	3.00
One vortage m. 2 tub.....	.70
One vortage m. 2 tub.....	.80
One vortage m. 2 tub.....	1.20
One vortage m. 2 tub.....	1.50
One vortage m. 2 tub.....	2.50
One vortage m. 2 tub.....	3.00
Fifty kjeldahl kolben.....	15.00
Twenty kjeldahl kolben.....	10.00
One burette.....	6.50
One buretentrager.....	13.75
One reagensgstell.....	1.50
One graunflasche.....	4.50
Five zangen n. messg vermickell.....	12.50
Two mess gabeln.....	3.00
Five paar wagenschalchen.....	6.00
One wasserstrahlufspumpe, No. 12.....	33.00
One wasserstrahlufspumpe, No. 7.....	16.50
One geblase n. glas.....	70.00
One regulator.....	9.50
One normal spermometer.....	10.00
One kupferkolben.....	12.00
One salz korkbohrer, 1-6.....	3.50
One Muencke lampe.....	6.00
One Hirschroald lampe.....	7.50
One buretentrager.....	14.50
Two pipettenflaschen.....	6.00
Two kohrentrager.....	8.00
One klemme, L.....	2.75
One klemme, N.....	4.00
One doppelklemme.....	5.00
One doppelklemme.....	4.50
Two doppelklemme.....	9.00
Three salz eis ringe.....	6.30
Five salz eis ringe.....	9.00
One salz eis ringe.....	2.20
Five salz eis ringe.....	9.00
One voltameter.....	10.00
One universalstatio.....	23.45
One federnde klemme gross.....	2.50
One federnde klemme gross.....	3.25
Packing, etc.....	225.25

M.4,282.83 \$1,038.59

Ten thousand four hundred cubic feet gas—Oakland Gas Co.....	28 00
Platinum wire foil—Justinian Caire.....	30 00
Nine and one half feet wire cloth—Justinian Caire.....	4 06
Sixty gallons coal oil—Justinian Caire.....	15 00
Three dozen glass funnels—Justinian Caire.....	4 82
Three watch glasses—Justinian Caire.....	75
Four dozen porcelain crucibles—Justinian Caire.....	8 16
One retort—Justinian Caire.....	10 00
Ten thousand cubic feet gas—Oakland Gas Co.....	25 00
Expressage—Patterson & Co.....	6 50
Postage stamps—N. B. Byrne.....	5 00
Expressage—Patterson & Co.....	21 25
Fifteen pounds acetic acid—J. Caire.....	2 70
Five pounds red lead—J. Caire.....	50
Sheet brass—J. Caire.....	1 25
Rivets and rivet set—J. Caire.....	60
Six quires glazed paper—J. Caire.....	3 00
Blank books—J. Caire.....	2 40
Two hundred tags—J. Caire.....	35
Two sieves—J. Caire.....	30
Two pairs tongs—J. Caire.....	2 00
Three thousand eight hundred cubic feet gas—Oakland Gas Co.....	9 50
Insurance (marine)—Canton Insurance Office.....	8 91
Freight and expressage—Patterson & Co.....	9 95
Nineteen thousand three hundred cubic feet gas—Oakland Gas Co.....	48 25
Expressage—Patterson & Co.....	8 50
Two copy books—Le Count Bros.....	2 75
Four letter files—Le Count Bros.....	2 00

One copy brush—Le Count Bros.		\$0 50
One tin hanging water-bowl—Le Count Bros.		75
Expressage—Patterson & Co.		50
Ten thousand five hundred cubic feet gas—Oakland Gas Co.		26 25
Freightage—Southern Pacific Co.		3 11
Five gallons bisulphide of carbon—John H. Wheeler		6 00
Expressage—Patterson & Co.		25
Ten thousand eight hundred cubic feet gas—Oakland Gas Co.		27 00
Expressage—Wells, Fargo & Co.		35
Bill of Elmer & Amend:		
Three dozen desiccators	\$16 50	
Fixtures for same	3 80	
Packing	75	
		21 05
Bill of Franz Schilling, in marks; total in dollars and cents:	Marks.	
One hundred stp. kolben ohne tubno, 1,000 gr.	36.00	
One kiste embellage	9.50	
Fifty st. kolben ohne tubno, 750 gr.	16.00	
Sixty-five st. kolben ohne tubno, 500 gr.	14.30	
One kiste embellage	8.00	
Seven st. kochflaschen, 8,000 qr.	14.00	
Seven st. kochflaschen, 6,000 qr.	12.25	
Eleven st. kochflaschen, 2,000 qr.	5.28	
One kiste embellage	9.50	
One hundred st. kochflaschen, 500 qr.	18.00	
One hundred st. kochflaschen, 200 qr.	9.00	
One kiste embellage	7.50	
Thirty-four st. kochflaschen, 200 qr.	16.32	
One hundred and twenty-five st. kochflaschen, 200 qr.	11.25	
One kiste embellage	8.00	
Fifty st. kochflaschen, 1,000 qr.	12.50	
Sixty st. kochflaschen, 750 qr.	18.20	
One kiste embellage	8.00	
Forty st. kochflaschen, 750 qr.	8.80	
Two hundred and ten st. kochflaschen, 250 qr.	21.00	
One hundred st. kochflaschen, 80 qr.	5.00	
One kiste embellage	8.00	
Thirty-six st. kolben ohne tubno, 2,000 qr.	21.60	
One hundred and twenty st. kolben ohne tubno, 60 qr.	10.80	
One kiste embellage	7.00	
Sixteen st. kolben ohne tubno, 2,000 qr.	9.60	
Twenty st. kolben ohne tubno, 4,000 qr.	18.00	
One kiste embellage	8.00	
Two st. kolben ohne tubno, 4,000 qr.	1.80	
Two st. kolben ohne tubno, 10,000 qr.	6.00	
Five st. kolben ohne tubno, 8,000 qr.	11.00	
Thirteen st. kolben ohne tubno, 600 qr.	24.05	
One hundred st. kolben ohne tubno, 80 qr.	9.00	
One kiste embellage	10.50	
Twenty-five st. woulsche flaschen m. 3 U, 150 qr.	10.52	
Thirteen st. woulsche flaschen m. 3 U, 200 qr.	5.85	
Thirteen st. woulsche flaschen m. 3 U, 250 qr.	6.50	
Twelve st. woulsche flaschen m. 3 U, 500 qr.	8.40	
Twelve st. woulsche flaschen m. 3 U, 750 qr.	9.60	
Six st. woulsche flaschen m. 3 U, 1,000 qr.	5.40	
Four st. woulsche flaschen m. 3 U, 2,000 qr.	6.80	
Three st. woulsche flaschen m. 2 U, 200 qr.	1.20	
Two st. woulsche flaschen m. 2 U, 250 qr.	.90	
Four st. woulsche flaschen m. 2 U, 500 qr.	2.40	
Four st. woulsche flaschen m. 2 U, 750 qr.	2.80	
Three st. woulsche flaschen m. 2 U, 1,000 qr.	2.40	
One kiste embellage	7.00	
Ten st. kochflaschen, 5,000 qr.	15.00	
Five st. kochflaschen, 6,000 qr.	8.75	
Eleven st. kochflaschen, 4,000 qr.	9.24	
Fifteen st. kolben ohne tubno, 500 qr.	3.30	
One kiste embellage	10.50	
Ten st. kochflaschen, 4,000 qr.	8.40	
Thirty-five st. kolben ohne tubno, 500 qr.	7.70	
Sixty st. kolben ohne tubno, 250 qr.	9.60	
One kiste embellage	8.00	
Five st. gascutbindungsflaschen, 100 qr.	2.25	
Eleven st. gascutbindungsflaschen, 750 qr.	4.40	
One hundred and four st. gascutbindungsflaschen, 250 qr.	20.80	
Forty st. gascutbindungsflaschen, 500 qr.	12.00	
One kiste embellage	8.00	

Five st. kochflaschen, 10,000 qr.	M.15.00
Three st. kochflaschen, 8,000 qr.	6.60
One kiste embellage	8.00
Three st. kochflaschen, 8,000 qr.	6.60
Two hundred st. kolben ohne tubno, 200 qr.	24.00
One kiste embellage	8.50
Forty-five and one half ko. glasrohren, 4-16 m. d'cm.	45.50
Seven ko. glasrohren, 21-23 m. d'cm.	8.40
One kiste embellage	3.00
One hundred and fifty st. kolben ohne tubno, 250 qr.	24.00
Two hundred st. kolben ohne tubno, 100 qr.	20.00
One kiste embellage	8.50
Fourteen st. retorten mit stopsel, 2,000 qr.	11.20
Nineteen st. retorten mit stopsel, 1,000 qr.	10.45
One kiste embellage	8.50
Forty-three st. retorten mit stopsel, 750 qr.	30.10
One st. retorten mit stopsel, 1,000 qr.	.55
One kiste embellage	8.00
One hundred and sixty salze becherglaser n. 1-5	120.00
One kiste embellage	6.50
Six salze becherglaser n. 1-16.	28.50
Twenty salze becherglaser n. 1-12	60.00
One kiste embellage	7.00
Twenty-six einzelkistchen	11.60
Fifty salze becherglaser n. 1-10	100.00
Fifty einzelkisten	17.50
One kiste embellage	8.00
Fifty-five st. retorten mit stopsel, 1,000 qr.	20.90
One kiste embellage	8.00
One hundred and ten st. retorten mit stopsel, 250 qr.	33.00
One kiste embellage	8.00
Thirty ko. cylinderrohren n. 12-16.	30.00
Six st. sicherheitsrohren m. 4 kugeln, No. 586	2.10
Thirteen st. sicherheitsrohren m. 2 kugeln, No. 586	2.60
Six st. sicherheitsrohren m. 1 kugeln, No. 586	1.08
One kiste embellage	5.00
One hundred salze becherglaser n. 1-5	1.50
One kiste embellage	6.00
Twenty-one st. preparatenglaser m. rand	8.40
One hundred and seventy-six st. preparatenglaser m. rand	44.00
One kiste embellage	7.00
Four st. retorten mit stopsel, 5,000 qr.	7.20
Three st. retorten mit stopsel, 4,000 qr.	4.50
Seventy-five retorten mit stopsel, 200 qr.	20.25
One kiste embellage	9.50
Sixty-five st. retorten mit stopsel, 500 qr.	24.70
One kiste embellage	9.00
Thirty st. reagirkelctn mit ausguss, 25 cm. f.	10.50
Twenty-one st. reagirkelctn, 15 cm. hoch	5.25
Twenty-five st. reagirkelctn, 15 cm. hoch	5.00
Twenty-six st. reagirkelctn, 10 cm. hoch	4.16
Sixty st. kochflaschen, 100 qr.	3.60
One kiste embellage	7.00
Forty-two st. retorten mit stopsel, 750 qr.	29.40
One kiste embellage	8.00
Twenty-five st. retorten mit stopsel, 750 qr.	17.50
Forty st. retorten mit stopsel, 100 qr.	8.00
One kiste embellage	8.00
Forty st. retorten mit stopsel, 250 qr.	12.00
Twenty-two st. retorten mit stopsel, 60 qr.	3.96
Fifty st. retorten mit stopsel, 200 qr.	13.50
Thirty st. kochflaschen, 100 qr.	1.80
One kiste embellage	8.00
Thirty st. retorten mit stopsel, 10,000 qr.	3.75
Six st. retorten mit stopsel, 6,000 qr.	18.20
Twenty st. retorten mit stopsel, 750 qr.	14.00
One kiste embellage	9.50
One hundred st. reagirglaser, 5 cm. lang 6 mm. d'cm.	.75
One hundred st. reagirglaser, 5 cm. lang 10 mm. d'cm.	1.00
One hundred st. reagirglaser, 5 cm. lang 13 mm. d'cm.	1.20
One hundred st. reagirglaser, 5 cm. lang 16 mm. d'cm.	1.40
One hundred st. reagirglaser, 5 cm. lang 20 mm. d'cm.	1.50
One hundred st. reagirglaser, 8 cm. lang 6 mm. d'cm.	1.00
One hundred st. reagirglaser, 8 cm. lang 10 mm. d'cm.	1.20

One hundred st. reagirglaser, 8 cm. lang 18 mm. d'cm.	M.1.30
One hundred st. reagirglaser, 8 cm. lang 16 mm. d'cm.	1.50
One hundred st. reagirglaser, 8 cm. lang 20 mm. d'cm.	1.70
Two hundred st. reagirglaser, 10 cm. lang 11 mm. d'cm.	2.80
Two hundred st. reagirglaser, 10 cm. lang 13 mm. d'cm.	3.20
Two hundred st. reagirglaser, 10 cm. lang 16 mm. d'cm.	4.00
Two hundred st. reagirglaser, 10 cm. lang 20 mm. d'cm.	5.00
Two hundred st. reagirglaser, 10 cm. lang 26 mm. d'cm.	6.00
Two hundred st. reagirglaser, 12 cm. lang 10 mm. d'cm.	3.60
Two hundred st. reagirglaser, 12 cm. lang 13 mm. d'cm.	4.00
Two hundred st. reagirglaser, 12 cm. lang 16 mm. d'cm.	4.40
Two hundred st. reagirglaser, 12 cm. lang 20 mm. d'cm.	6.00
Two hundred st. reagirglaser, 15 cm. lang 13 mm. d'cm.	4.40
One kiste embellage	6.00
Four einzelkisten	6.00
Three st. retorten mit stopsel, 10,000 qr.	11.25
Three st. retorten mit stopsel, 8,000 qr.	9.60
Twenty-one st. retorten mit stopsel, 750 qr.	14.70
One kiste embellage	9.50
One hundred st. reagirglaser, 15 cm. lang 26 mm. d'cm.	3.90
Sixty-four st. reagirglaser, 15 cm. lang 33 mm. d'cm.	2.80
Two hundred st. reagirglaser, 15 cm. lang 20 mm. d'cm.	6.20
Four hundred st. reagirglaser, 15 cm. lang 16 mm. d'cm.	10.80
One hundred st. reagirglaser, 20 cm. lang 33 mm. d'cm.	6.00
One hundred st. reagirglaser, 20 cm. lang 26 mm. d'cm.	5.00
Two hundred st. reagirglaser, 12 cm. lang 26 mm. d'cm.	7.00
Twenty-five st. reagirglaser, 25 cm. lang 35 mm. d'cm.	2.25
Twenty-five st. reagirglaser, 30 cm. lang 30 mm. d'cm.	2.60
One kiste embellage	8.00
Twenty-six st. trichterrohren, Huttentrichter	6.00
Fifty-five st. trichterrohren, Glockentrichter	8.25
Eleven st. sicherheitsrohren ohne K, No. 586	1.65
Eleven st. sicherheitsrohren mit 2 k., H.	3.63
Eleven st. sicherheitsrohren mit 1 k., H.	2.75
Eleven st. sicherheitsrohren ohne k., H.	2.75
Twenty-five trichterrohren, Huttentrichter	5.00
Two hundred st. kugelrohren aus schwerschmelz, B	40.00
Fifty st. reagirglaser, 25 cm. lang 30 mm. d'cm.	4.00
Fifty st. reagirglaser, 25 cm. lang 25 mm. d'cm.	3.00
Twenty-six st. reagirglaser, 25 cm. lang 40 mm. d'cm.	3.12
Two hundred st. reagirglaser, 20 cm. lang 20 mm. d'cm.	8.00
Twenty-five st. reagirglaser, 30 cm. lang 25 mm. d'cm.	2.25
Thirteen st. reagirglaser, 30 cm. lang 35 mm. d'cm.	1.56
One kiste embellage	8.00
Fifty ko. massive stabe, 10 mm. d'cm.	50.00
One kiste embellage	3.50
One st. retorte m. st., 5,000 qr.	1.80
Three st. retorte m. st., 4,000 qr.	4.50
Four st. retorte m. st., 200 qr.	1.08
Thirty-five st. retorte m. st., 100 qr.	7.00
One hundred and twenty st. kochflaschen, 100 qr.	7.20
Fifty-five st. reagirglaser, 15 cm. lang 40 mm. d'cm.	3.50
Thirteen st. reagirglaser, 30 cm. lang 40 mm. d'cm.	1.95
One kiste embellage	8.00
Fifteen st. trichter, 21 cm. d'cm.	6.75
Fifteen st. trichter, 16 cm. d'cm.	3.75
Fifty-two st. trichter, 7 cm. d'cm.	4.18
One kiste embellage	8.00
One hundred and fifteen st. trichter, 10 cm. d'cm.	15.52
Fifteen st. trichter, 18 cm. d'cm.	5.40
One kiste embellage	8.00
Sixty-five st. gascutbindungsflaschen, 500 qr.	19.50
Three st. woulsche flaschen m. 3 ft., 3,000 qr.	6.60
Two st. woulsche flaschen m. 2 ft., 2,000 qr.	3.00
Two st. woulsche flaschen m. 2 ft., 3,000 qr.	4.00
One hundred and fifteen st. trichter, 5 cm. d'cm.	8.05
One hundred st. trichter, 5 cm., d'cm.	6.00
Fifty-two st. trichter, 7 cm. d'cm.	4.18
Twenty-five st. trichter, 8 cm. d'cm.	2.50
One kiste embellage	8.00
Forty-two salze becherglaser, Nos. 1-5	31.50
Two hundred salze becherglaser, Nos. 1-3	76.00
One kiste embellage	6.00
One hundred and thirty st. preparatenglaser m. rand, 100-60 mm.	32.50

One hundred and twenty-five st. trichter; 8 cm. d'cm.	M. 12.50	
Thirty-five st. trichter, 13 cm. d'cm.	7.00	
One kiste embellage	8.00	
	M. 2,478.12	
Beglaubigungsgekuhren	10.70	
Gebuhren agenten	1.40	
	M. 2,490.82	\$804 02
Bill of James R. McDonald & Co.:		
Freight paid on forty-seven cases glassware from Gehlberg to Hamburg, Germany	M. 140.70	
Cartage and shipping charges	63.60	
Forwarding commission	70.50	
Postage and petties	1.50	
	M. 276.30	87 00
Bill of Samuel Stanton, in pounds, shillings, and pence; total in dollars and cents:		
Two thermometers, with single cylinder bulb, graduated stems, 40 cm. long; one reading from 5° to 15° centl., and the other from 15° to 33° centl.	£ 6 0 0	s. d.
One thermometer with double cylinder bulb and means of adjusting mercury, with 40 cm. divided stem, embracing 3° or 4° centl., divided into arbitrary divisions of cms. and mms.	6 0 0	
One mahogany case for same	15 0	
One clockwork supper	3 0 0	
One Brown's calibrating apparatus	4 4 0	
One copper calorimeter jacket	5 0 0	
Tin lined case	15 6	
Three ounces 680 platinum calorimeter, 620 platinum stirrer, and 270 platinum gauge	18 5 6	
Single stirring apparatus with electro-magnetic motion	10 10 0	
Packing case	1 0 6	
Consular invoices	13 0	
Carriage to Liverpool	7 6	
Bills of lading and postage	2 6	
Dues, entries, etc.	5 6	
Freight to San Francisco	1 90 0	
Agency and insurance	15 6	
Sundry expenses	18 9	
Commission	3 0 0	
	£63 10 3	
Less on packing boxes	10 0	
	£63 0 3	308 43
Custom House entry on seventy-two cases chemicals and glassware—G. W. Reed	20 00	
Freight on sixty-six packages from Hamburg to San Francisco—Wm. Wolff & Co.	170 00	
State toll on same—Wm. Wolff & Co.	35	
Three Becker balances and weights—Justinian Caire	191 10	
Freight and expressage—Patterson & Co.	41 00	
Two hundred and eighteen pounds aqua ammonia—San Francisco Gaslight Co.	17 45	
Two carboys—San Francisco Gaslight Co.	5 00	
One dozen blank books—Le Count Bros.	50	
One dozen blank books—Le Count Bros.	60	
One dozen blank books—Le Count Bros.	75	
One half dozen memorandum books—Le Count Bros.	3 00	
One half dozen memorandum books—Le Count Bros.	4 00	
One copying press—Le Count Bros.	10 00	
One bottle ink—Le Count Bros.	1 00	
One quart mucilage—Le Count Bros.	50	
One box rubber bands—Le Count Bros.	1 00	
One box pens—Le Count Bros.	75	
Two baskets—Le Count Bros.	1 50	
Two carboys muriatic acid—Golden City Chemical Works	12 40	
One carboy sulphuric acid—Golden City Chemical Works	4 18	
Freight on two cases glassware from Philadelphia—Southern Pacific Co.	34 65	
Expressage—Patterson & Co.	1 00	
Insurance—Canton Insurance Office	2 56	
		\$5,051 28

APPENDIX No. 6—*College of Civil Engineering.*

One copy "Agriculture of Massachusetts," 1869-70—Massachusetts State Board of Agriculture	\$1 00
Telegram—Western Union Telegraph Co.	55
Telephone—Sunset Telephone Co.	50
One Thatcher's "Calculator"—Kenfel & Esser Co.	27 00
One whisk broom—Feigenbaum & Co.	25
Expressage—Wells, Fargo & Co.	3 50
Six pairs butts—Savage Bros.	40
Six knobs—Savage Bros.	20
Six draw pulls—Savage Bros.	25
One gross screws—Savage Bros.	25
Two brass locks—Savage Bros.	1 00
Eighteen straps—O. Emaly & Sons	2 70
Material for glass case—Niehaus Bros. & Co.	20 00
Traveling expenses—Carl Rabe	1 20
Bill of Mayer & Muller, in marks; total in dollars and cents:	
Berliner Astronom Tahrbuch, 1890-91	M. 21.60
Porto	2.00
	<hr/> M. 23.80
One hank sash cord—Osborn & Alexander	5 74
Three rosewood handles—Osborn & Alexander	85
Boring same—Osborn & Alexander	75
One lot pens—Le Count Bros.	25
One graduated spirit level—A. Lietz & Co.	25
One clamp screw—A. Lietz & Co.	10 00
One burner—A. S. Graff & Co.	1 00
Twenty gallons Elaine oil—J. McClain	90
Nineteen yards Duplex drawing paper—E. Denny & Co.	6 40
Ten yards Paragon drawing paper—E. Denny & Co.	1 20
One roll tracing cloth—E. Denny & Co.	8 85
One half dozen Hunter's axes—Osborn & Alexander	7 50
One half dozen ax handles—Osborn & Alexander	4 50
One half dozen chalk lines—Osborn & Alexander	60
One vise—Osborn & Alexander	60
One jeweler's hammer—Osborn & Alexander	50
One pair cutting pliers—Osborn & Alexander	65
Two files—Osborn & Alexander	75
Two sets circular stencils—C. A. Klinkner & Co.	50
One map of California—S. W. Dunn	5 00
Traveling expenses—Carl Rabe	2 00
Repairing clock—Alfred Berg	25
Cleaning and regulating sidereal chronometer—F. H. McConnell	75
Expressage—Patterson & Co.	10 00
One 50-foot steel tape—Buff & Berger	35
Three ½-pint cans mixed paint—T. J. Bass & Co.	6 10
Two brushes—T. J. Bass & Co.	70
One bottle turpentine—T. J. Bass & Co.	30
Thirty-three and one third hours clerical work—W. C. Allen	15
Enlarging holes in plate glass—F. M. Farwell	10 00
One graduated level—A. Lietz & Co.	5 00
One roll blue print—E. Denny & Co.	4 00
One desk scraper—Savage Bros.	3 00
Traveling expenses—Carl Rabe	65
Repairing weather vane—Dalziel & Moller	45
Repairing two electric burners—California Electrical Works	75
One incandescent burner—California Electrical Works	4 50
Sal ammoniac—California Electrical Works	2 50
Six 4-throw switches—California Electrical Works	2 30
Chromate of potassium—California Electrical Works	4 50
Box for same—California Electrical Works	4 00
Expressage—Patterson & Co.	15
Three 15-M accumulators—Pacific Electrical Storage Co.	1 50
Chimneys—J. McClain	45 00
Traveling expenses—Carl Rabe	25
Traveling expenses—Carl Rabe	25
Traveling expenses—Carl Rabe	25
One brush—Buchanan Bros.	25
Expressage—Patterson & Co.	2 00
Cleaning and repairing seismograph—F. H. McConnell	2 00
Expressage—Patterson & Co.	10 00
Expressage—Wells, Fargo & Co.	2 50
Ten yards crash toweling—R. Weill & Son	25
One pair shears—Dutton & Partridge	1 00
	2 00

Replacing worn parts, cleaning, repairing, and adjusting the Grey-Milne seismograph—Joseph Le Conte, Jr.	\$25 00
Two shears ground—A. Erlandsen	40
Six No. 2 leader chimneys—Nathan, Dohrmann & Co.	90
Repairing level—A. Leitz & Co.	2 00

\$271 79

APPENDIX No. 7 A—College of Mechanics.

Expressage—Patterson & Co.	\$0 75
Three thousand five hundred cubic feet gas—Oakland Gas Co.	8 75
One hundred and five pounds sheet brass—Justinian Caire	33 15
Twelve pounds solder—Justinian Caire	3 00
Three camel's hair brushes—Justinian Caire	75
Three camel's hair brushes—Justinian Caire	90
One bottle metal varnish—Justinian Caire	1 50
One half dozen hose couplings—Justinian Caire	3 50
Repairing vise—Justinian Caire	4 00
One half dozen locks—Justinian Caire	2 70
Four sheets galvanized iron—Justinian Caire	4 75
Four thousand six hundred cubic feet gas—Oakland Gas Co.	11 50
Expressage—Patterson & Co.	1 25
Three thousand five hundred cubic feet gas—Oakland Gas Co.	8 75
Four thousand six hundred cubic feet gas—Oakland Gas Co.	11 50
Expressage—Patterson & Co.	2 75
Four thousand four hundred cubic feet gas—Oakland Gas Co.	11 00
Expressage—Patterson & Co.	1 00
Nine thousand four hundred cubic feet gas—Oakland Gas Co.	23 50
Expressage—Patterson & Co.	75
Two reams parchment—H. S. Crocker & Co.	4 20
One half thousand Chelmsford epo—H. S. Crocker & Co.	1 50
One half dozen penholders—H. S. Crocker & Co.	30
One half dozen penholders, rubber—H. S. Crocker & Co.	75
One half dozen penholders, wood—H. S. Crocker & Co.	30
Eight pieces velvet rubber—H. S. Crocker & Co.	50
Two pieces Faber's artist—H. S. Crocker & Co.	30
Two boxes bands—H. S. Crocker & Co.	1 13
One box pens—H. S. Crocker & Co.	1 00
One bottle black ink—H. S. Crocker & Co.	25
Three bottles Worthington ink—H. S. Crocker & Co.	45
One bottle mucilage—H. S. Crocker & Co.	25
One bottle mucilage—H. S. Crocker & Co.	25
One and one half dozen pads—H. S. Crocker & Co.	1 65
Two pads for desk—H. S. Crocker & Co.	1 15
Seven quires manilla paper—H. S. Crocker & Co.	2 50
Two rolls blue print paper—H. S. Crocker & Co.	4 60
Fifteen pounds emery flour—Justinian Caire	1 50
One pound burrs and washers—Justinian Caire	35
One pair tongs—Justinian Caire	1 50
One steam gauge—Justinian Caire	6 75
One siphon and cock—Justinian Caire	1 25
Twenty-five feet $\frac{1}{2}$ -inch rubber pipe—Justinian Caire	1 50
Twenty-five feet $\frac{3}{4}$ -inch rubber pipe—Justinian Caire	1 75
Twenty-five feet $\frac{1}{2}$ -inch rubber pipe—Justinian Caire	2 00
One pound Escut pins—Justinian Caire	50
One dozen lead numbers—Justinian Caire	50
One dozen emery sticks—Justinian Caire	35
One half dozen 9-inch hand-cut files—Justinian Caire	4 00
One half dozen 2-inch hand-cut files—Justinian Caire	3 25
One half dozen $\frac{1}{2}$ -inch hand-cut files—Justinian Caire	1 80
One fourth dozen 6-inch hand-cut files (square)—Justinian Caire	1 10
One fourth dozen 5-inch hand-cut files (square)—Justinian Caire	90
One fourth dozen $\frac{1}{2}$ -inch hand-cut files (square)—Justinian Caire	90
One fourth dozen 6-inch half-round files—Justinian Caire	1 20
One fourth dozen 4-inch half-round files—Justinian Caire	1 00
Pulleys—Justinian Caire	25
Wire cloth—Justinian Caire	4 35
Two 5-inch hand vises—Justinian Caire	3 00
One gross file handles—Justinian Caire	6 50
Expressage—Patterson & Co.	2 25
Four thousand six hundred cubic feet gas—Oakland Gas Co.	11 50
Assorted paints—California Paint Co.	3 75
Three hundred and fifty-six pounds castings—Hinkley, Spiers & Hayes	16 02
Pattern work—Hinkley, Spiers & Hayes	60
Seventy pounds brass castings—F. Band	21 00
Expressage—Patterson & Co.	7 00

Five thousand five hundred cubic feet gas—Oakland Gas Co.	\$13 75
One piece pipe—Dunham, Carrigan & Hayden Co.	1 50
Three sheaves—Dunham, Carrigan & Hayden Co.	1 80
Two flanges—Dunham, Carrigan & Hayden Co.	2 80
Screw pulleys—Dunham, Carrigan & Hayden Co.	45

\$235 45**APPENDIX No. 7 B—College of Mechanics—State Appropriation.**

Ten gallons cylinder oil—Union Oil Co.	\$10 00
Ten gallons electric oil—Union Oil Co.	7 50
Two clock movements—Nordman Bros.	10 50
Two dozen chilled iron saws—Justinian Caire	1 80
One molding plane—Justinian Caire	1 75
One half dozen small locks—Justinian Caire	1 50
One clock spring—Justinian Caire	1 50
One dozen screw pulleys—Justinian Caire	2 25
Assortment of wheels and pinions—Justinian Caire	10 00
One valve—Justinian Caire	2 25
Eighty feet catgut—Justinian Caire	2 00
One half dozen flat files—Justinian Caire	3 00
Five pounds sheet wire—Justinian Caire	5 75
One saw frame—Justinian Caire	1 50
Gas cutting tools—Justinian Caire	14 50
Three bars rolled iron—Justinian Caire	7 00
Seventy-five pounds brass castings—F. Band	22 50
One set twist drills—Justinian Caire	7 50
One set assorted drills—Justinian Caire	15 25
One half dozen pairs brass hinges—Justinian Caire	45
One half dozen brass locks—Justinian Caire	1 45
Fifteen pounds brass wire rods—Justinian Caire	4 50
Assortment of bronze—Justinian Caire	1 50
Two spring dividers—Justinian Caire	2 00
One machinist's square—Justinian Caire	1 50
Iron clamps—Justinian Caire	4 10
One vulcanizer and attachments—James W. Edwards	57 25
One metal case—Bernstein & Co.	15 00
One walnut base—Bernstein & Co.	2 00
Thirteen window shades—Frank S. Wright	45 00
Thirty cells prism leclanche—Paul Seilers Electrical Works	39 60
Fifteen cells Fuller—Paul Seilers Electrical Works	18 00
Three leclanche zincs—Paul Seilers Electrical Works	45
Fifteen pounds bichromate potash—Paul Seilers Electrical Works	3 75
Three boxes—Paul Seilers Electrical Works	80
Two galvanized boxes, with faucets—George H. Tay & Co.	20 00

\$345 90**APPENDIX No. 8 A—College of Mines.**

Expressage—Patterson & Co.	\$1 50
One thousand one hundred cubic feet gas—Oakland Gas Co.	2 75
One gross drawer pulls—Dunham, Carrigan & Hayden Co.	\$2 88
One sixth gross drawer pulls—Dunham, Carrigan & Hayden Co.	75
One quarter gross sash rollers—Dunham, Carrigan & Hayden Co.	3 00
Three gross screws—Dunham, Carrigan & Hayden Co.	45
Four dozen screws—Dunham, Carrigan & Hayden Co.	20

Discount \$7 28

3 01

Eight hundred cubic feet gas—Oakland Gas Co.	4 27
Expressage—Patterson & Co.	2 00
Two thousand five hundred cubic feet gas—Oakland Gas Co.	5 00
Forging six pokers—McIntosh & Frye	6 25
One half dozen carriage bolts—Savage Bros.	1 50
One collar—Joe Wagner Manufacturing Co.	30
Five pounds putty—S. Wakeham	50
One pint shellac—S. Wakeham	25
One thousand eight hundred cubic feet gas—Oakland Gas Co.	50
One half gross japanned drawer pulls—Dunham, Carrigan & Hayden Co.	4 50
One quarter gross japanned drawer pulls—Dunham, Carrigan & Hayden Co.	\$1 44
Three dozen sash rollers—Dunham, Carrigan & Hayden Co.	1 50
	3 00

Discount \$5 94

2 09

3 85

Expressage—Patterson & Co.	\$5 25
One barrel cement—Savage Bros.	4 25
One half dozen bolts—Savage Bros.	35
One pound copper rivets and burrs—Osborn & Alexander.	40
One rivet set—Osborn & Alexander	50
Expressage—Patterson & Co.	3 75
Four thousand cubic feet gas—Oakland Gas Co.	10 00
Expressage—Patterson & Co.	75
Expressage—Patterson & Co.	4 50
Eight thousand one hundred cubic feet gas—Oakland Gas Co.	20 25
One hundred and five gallons coal oil—Osborn & Alexander	12 60
One tank and bibb—Osborn & Alexander.	12 00
Cartage on same—Osborn & Alexander	1 50
One hundred and five gallons coal oil—Osborn & Alexander	12 60
Three porous cells—Justinian Caire	1 20
Four large rubber stoppers—Justinian Caire	2 60
Six glass tubes—Justinian Caire	4 50
Four bell glass jars and rubber stoppers—Justinian Caire	7 52
Twenty-five pounds potassium chlorate—Justinian Caire	5 00
Expressage—Patterson & Co.	7 25
One piece 2-inch pipe, with caps—Dalziel & Moller.	60
Two sacks charcoal—Stewart & Trowbridge	1 60
One sack salt—Stewart & Trowbridge	20
One paper screws—Savage Bros.	45
One pint shellac—S. Wakeham	75
One can paint—S. Wakeham	1 00
One Yale nightlatch—A. Erlandsen	3 00
One bronzed door plate—A. Erlandsen	25
Carbons—Berkeley Electric Light Co.	75
Four glass jars—Justinian Caire	10 80
Twenty-one and one half hours' labor repairing dynamo—Electric Engraving Co.	13 97
Shaft, spider, and wire—Electric Engraving Co.	5 00
Expressage—Patterson & Co.	75
One pair Button's pliers—Dunham, Carrigan & Hayden Co.	1 00
Two dozen door buttons and plates—Dunham, Carrigan & Hayden Co.	1 50
One half dozen bastard files—Dunham, Carrigan & Hayden Co.	95
Sixty feet black $\frac{1}{2}$ -inch pipe—Dunham, Carrigan & Hayden Co.	1 43
Sixty feet black $\frac{3}{4}$ -inch pipe—Dunham, Carrigan & Hayden Co.	1 65
Sixty feet black $\frac{1}{2}$ -inch pipe—Dunham, Carrigan & Hayden Co.	2 10
One bundle black $\frac{3}{4}$ -inch pipe—Dunham, Carrigan & Hayden Co.	3 85
One bundle black $\frac{1}{2}$ -inch pipe—Dunham, Carrigan & Hayden Co.	4 05
One dozen file handles—Dunham, Carrigan & Hayden Co.	50
Three thousand one hundred cubic feet gas—Oakland Gas Co.	7 75
Four boiler tubes—Osborn & Alexander	4 50
Repairing arms for mullers—Nelson & McLellan	2 50
Two thousand three hundred pounds Cumberland coal—Stewart & Trowbridge	20 00
Twelve glass tubes—Justinian Caire	4 20
Six-pound bottle, C. P. H. nozzle—Justinian Caire	13 44
Six porous cells—Justinian Caire	1 80
One glass apparatus—Justinian Caire	7 75
Expressage—Patterson & Co.	2 00
Three thousand three hundred cubic feet gas—Oakland Gas Co.	9 25
Two Dodge wood-split pulleys—Simonds Saw Co.	5 26
Twenty feet $\frac{5}{8}$ -inch stove-pipe, one damper, one corrugated elbow, one collar, and one thimble—J. M. McNamara	4 50

\$289 04

APPENDIX No. 8 B—College of Mines—State Appropriation.

Two hundred pounds Paris white—Whittier, Fuller & Co.	\$3 00
Fifteen pounds fish glue—Whittier, Fuller & Co.	5 25
Four pounds O. K. stucco—Whittier, Fuller & Co.	4 60
Thirteen and three fourths yards cotton sheeting—Whittier, Fuller & Co.	5 50

\$18 35

Less 70

One thousand and forty-four feet pine lumber—Henry W. Taylor	\$17 65
Three hundred and four feet T. and G. redwood—Henry W. Taylor	24 01
Two hundred and ninety-four feet surfaced redwood—Henry W. Taylor	9 72
Four hundred feet pine—Henry W. Taylor	9 70
Mill work—Henry W. Taylor	9 20
Cartage—Henry W. Taylor	11 98
Iron work for two arastras—Hinkley, Spiers & Hayes	1 00
One elevator boot and sleeve—George H. Tay & Co.	110 00
One screw conveyor trough—George H. Tay & Co.	81 00
	12 00

Two pulleys, three flat boxes, one shaft, two collars, eight feet screw conveyor, forty-eight steel cups, one hundred elevator bolts, seventy feet cotton belting, comp. rings and leather—Wagner Manufacturing Co.	\$70 15
Eight hundred and forty-six feet boards—H. W. Taylor	31 00
Mill work—H. W. Taylor	1 50
Fifty pieces clear pine—H. W. Taylor	4 00
Seventy-one feet boards—H. W. Taylor	2 88
Mill work—H. W. Taylor	50
One batea—Justinian Caire	1 00
One keg assay litharge—Justinian Caire	8 00
One hundred pounds C. P. lead—Justinian Caire	16 00
Blowpipe material—Justinian Caire	50
One hundred dozen "E" Battersea crucibles—John Taylor & Co.	56 25
Fifty dozen "F" Battersea crucibles—John Taylor & Co.	31 88
One compass—H. S. Crocker & Co.	17 50
One Abney level—H. S. Crocker & Co.	18 00
One pedometer—H. S. Crocker & Co.	6 50

\$501 87

APPENDIX No. 8—Department of Lick Observatory.

Expenses examining manganese deposit—A. W. Jackson	\$15 00
One Astronom Nachrichten—B. Westermann & Co.	8 00
Telegrams—Western Union Telegraph Co.	8 06
Telephones—Sunset Telephone Co.	2 65
One red ry. globe—H. A. Mathews	75
One star red globe—H. A. Mathews	75
Two hundred and fifty-five and one half gallons heavy black oil—Pacific Oil Co.	30 66
Labor—Joseph Broderick	6 00
Expressage—Farmers Union	25 35
Expressage—H. C. Brown	13 55
Sewing curtains—Mrs. Humphrey	1 50
One fourth dozen rules—H. A. Mathews	1 20
One fourth dozen India ink—H. A. Mathews	75
Three thousand feet lattice—Santa Clara Valley Mill and Lumber Co.	18 75
Three hundred feet lattice—Santa Clara Valley Mill and Lumber Co.	2 25
Three hundred square feet wire netting—The John Stock Sons	22 50
Five gallons boiled linseed oil—Farmers Union	3 88
One plain shade—Rucker Bros.	1 00
One dozen packages pyramid pins—H. A. Mathews	1 50
Fifty dozen dry plates—M. A. Seed Dry Plate Co.	\$70 00
Less 10 per cent.	7 00
	<hr/> 63 00
Six patent transfer frames—S. C. Partridge	3 90
Six hanks sash cord—Farmers Union	6 00
Six hose bibbs—Farmers Union	6 00
One fourth dozen padlocks—H. A. Mathews	43
Seventeen extra keys—H. A. Mathews	2 04
Forty pounds ells and nipples—The John Stock Sons	6 72
Repairing lens—Wight & Branham	1 60
One hammer—Lovett & Gommell	1 00
One box soap—Farmers Union	1 00
One dozen hack saws—Farmers Union	2 00
One punch—Farmers Union	1 75
One half dozen 8-ounce tacks—Farmers Union	25
Three whisk brooms—Farmers Union	45
Parlor matches—Farmers Union	1 00
Eleven pounds nails—Farmers Union	96
Whip for team—Farmers Union	1 00
Two paint brushes—Farmers Union	3 00
Expressage—H. C. Brown	1 14
Telegram—Western Union Telegraph Co.	75
Postage stamps—S. W. Burnham	20 00
Pattern for a part of telescope—Wight & Branham	3 50
Twenty-one pounds bronze casting—Wight & Branham	8 40
Labor on casting—Wight & Branham	8 00
Eight new shoes—T. A. Carroll	4 00
Eight new shoes—T. A. Carroll	4 00
Four tugs for harness—Keiser & Koch	\$8 00
One boot for mule—Keiser & Koch	75
	<hr/> \$8 75
Less	50
	<hr/> 8 25
Four 8x10 transfer frames—Oscar Foss	1 92
Four 4x5 Scovill's N. S. holders—Oscar Foss	6 00

One light glass for cupola—Whittier, Fuller & Co.	\$3 00
Packing—Whittier, Fuller & Co.	50
Staples for wire fence—Farmers Union.	50
One hundred and twelve pounds hypo—S. C. Partridge	5 00
Five gallons turpentine—Farmers Union	3 50
Twenty-one pounds waste—Farmers Union	3 15
Five dozen $\frac{1}{2}$ Carbutt L. S. plates—S. C. Partridge	3 25
Five yards thin P. & B. paper—S. C. Partridge	25
Six sheets black paper—S. C. Partridge	15
Box—S. C. Partridge	10
Three B. scrapers—Farmers Union	1 50
Four pounds chrome green—Farmers Union	80
One copy Neison's Work on the Moon—William Wesley & Son	4 71
Packing two cases books—E. T. Anthony & Co.	5 00
Annuaire du Bureau des Longitudes, 1838-1858-1876-1877-1878—Miss D. W. Lyman	1 00
T. Bugge's Observations Astronom., Copenhagen—Miss D. W. Lyman	1 00
Hind's Solar System—Miss D. W. Lyman	50
Nature, from November 2, 1871, to May, 1876—Miss D. W. Lyman	10 00
Postage and registry—Miss D. W. Lyman	75
Binding two Bahensting—Hicks-Judd Co.	1 80
Fifty boxes for preserving negatives—A. Fleishhacker & Co.	2 75
Forty-five boxes for negatives—A. Fleishhacker & Co.	2 48
Five gallons balata paint—George B. McKee & Co.	6 25
Two gallons balata paint—George B. McKee & Co.	2 50
Cleaning chronometer and chain hook—F. H. McConnell	10 00
Four dozen $\frac{1}{2}$ Seed plates—S. C. Partridge	2 60
Box—S. C. Partridge	10
One half dozen quarts violet ink—Payot, Upham & Co.	2 70
Postage stamps—S. W. Burnham	25 00
Ten tons hay—J. D. D. Bernal	150 00
One Rochester camera—E. E. Barnard	15 00
Two volumes Encyclopædia Britannica—Edward Holland	14 00
Expressage—H. C. Brown	26 78
Expressage—H. J. Ward	4 52
Expressage—Farmers Union	56 20
Expressage—H. C. Brown	11 70
Expressage—Farmers Union	15 85
Thirty pounds waste—Union Iron Works	4 20
Two Edison lamps—Paul Seilers Electrical Works	2 00
One plate letter box—Paul Seilers Electrical Works	3 61
Four dozen manilla letter pads—Payot, Upham Co.	6 00
Five dozen manilla note pads—Payot, Upham & Co.	3 75
Three dozen negative plates—S. C. Partridge	1 95
Box—S. C. Partridge	10
Horse feed—Farnsworth Bros.	11 00
Expressage—H. C. Brown	4 74
Six rim locks—The John Stock Sons	1 50
Six pairs strap hinges—The John Stock Sons	1 20
Assorted nails—The John Stock Sons	5 00
Assorted screws, brass and iron—The John Stock Sons	5 00
Butt hinges—The John Stock Sons	4 25
Ten pounds solder—The John Stock Sons	1 80
Assorted window glass—The John Stock Sons	10 00
Twelve sheets corrugated galvanized iron—The John Stock Sons	15 00
Four hundred and twenty-nine feet T. and G. redwood—Santa Clara Valley Mill and Lumber Co.	15 00
One Wells' Adder—B. Westermann & Co.	7 00
Postage and register fees—B. Westermann & Co.	28
One Pickering governor—Wight & Branham	50 00
Binding fourteen volumes—Hicks-Judd Co.	9 10
Binding fifteen volumes—Hicks-Judd Co.	13 50
Binding two volumes—Hicks-Judd Co.	2 70
Binding eight volumes—Hicks-Judd Co.	5 20
Binding three volumes—Hicks-Judd Co.	90
Binding one volume—Hicks-Judd Co.	1 15
Rent of telephone, one year—Sunset Telephone Co.	35 00
One carboy—Paul Seilers Electrical Works	2 50
One hundred and ninety-two pounds sulphuric acid—Paul Seilers Electrical Works	4 80
Ten pounds bichromate of potash—Paul Seilers Electrical Works	1 80
Three 3-pound cans battery cinfiel—Paul Seilers Electrical Works	2 40
One black sign—Paul Seilers Electrical Works	5 50
Freight paid—Paul Seilers Electrical Works	81
One 1-gallon pitcher—Farmers Union	60
One 2-quart pitcher—Farmers Union	50
One 1-pint pitcher—Farmers Union	15

Forty pieces Oregon pine—Santa Clara Valley Mill and Lumber Co.	\$12 00
One gross assorted pens—Payot, Upham & Co.	1 55
One dozen Stafford's carmine—Payot, Upham & Co.	2 54
Two and one half pounds sulph. soda—S. H. Wagner	1 00
One Roch holder—S. C. Partridge	2 00
Slides for holder—S. C. Partridge	50
Postage—S. C. Partridge	15
Five dozen deck plates—S. C. Partridge	3 25
Box—S. C. Partridge	10
Thirty dozen plates—S. C. Partridge	18 15
Forty-nine and one half gallons linseed oil—Whittier, Fuller & Co.	33 16
Cartage—Whittier, Fuller & Co.	50
Two spools for curtain—A. Hale & Co.	10
Two hooks for curtain—A. Hale & Co.	20
Two rings for curtain—A. Hale & Co.	20
Thirteen yards cretonne curtain—A. Hale & Co.	2 15
Two basin cocks—The John Stock Sons	6 00
One basin cock—The John Stock Sons	2 00
One hundred feet halyards—Neville & Co.	1 50
Expressage—Neville & Co.	25
Two bottles nitric acid—Redington & Co.	3 00
One door and frame—R. Fraser	6 60
One rim lock—R. Fraser	60
One pair hinges—R. Fraser	25
Four N. P. batteries—Paul Sellers Electrical Works	26 00
Three picture frames—R. Fraser	4 80
Three lights glass—R. Fraser	1 80
Seventy-two boxes plates for negatives—A. Fleishhacker & Co.	3 96
Twenty-four sheets pasteboard—A. Fleishhacker & Co.	5 40
One pound bisulphide carbon—Justinian Caire	50
Expressage—Mount Hamilton Stage Co.	2 05
Ten days' labor—R. P. Fraser	50 00
Three days' labor—R. Bennett	9 00
Fifty feet steel tape—John Roach	7 50
Labor painting dome—W. T. Maynard	92 75
Stage fare—W. T. Maynard	3 00
Painting—Chris. Shilling	4 00
Expressage—H. C. Brown	9 58
Expressage—J. D. D. Bernal	28 50
Telegrams—Western Union Telegraph Co.	6 47
One case oil—Farmers Union	2 30
Screens for lamps—Farmers Union	50
Floor brush—Farmers Union	3 00
Six balls twine—Farmers Union	1 20
Tumblers for visitors' room—Farmers Union	50
One brush for visitors' room—Farmers Union	1 00
Two trowels—Farmers Union	1 40
Five gallons linseed oil—Farmers Union	3 75
One half dozen saw files—Farmers Union	50
One case oil—Farmers Union	2 30
One hundred pounds white lead—Farmers Union	6 25
Ten gallons oil—Farmers Union	7 75
Six barrels cement—Farmers Union	27 00
One 8-foot ladder—Farmers Union	3 20
Two paint brushes—Farmers Union	3 00
Six cans lye—Farmers Union	50
Twenty-five pounds zinc—Farmers Union	3 25
Fifty pounds yellow ochre—Farmers Union	2 50
Five gallons oil—Farmers Union	3 75
Five gallons turpentine—Farmers Union	3 50
Matches—Farmers Union	2 00
One barrel raw linseed oil—Whittier, Fuller & Co.	34 50
Two hundred pounds white lead—Whittier, Fuller & Co.	12 00
One can green—Whittier, Fuller & Co.	80
One can yellow ochre—Whittier, Fuller & Co.	1 10
One can coach black—Whittier, Fuller & Co.	1 70
One can umber—Whittier, Fuller & Co.	70
Fifteen pounds Paris white—Whittier, Fuller & Co.	37
Ten pounds French zinc—Whittier, Fuller & Co.	1 00
One pound Cooper's glue—Whittier, Fuller & Co.	35
Two kalsomine brushes—Whittier, Fuller & Co.	6 50
Ten gallons boiled oil—Whittier, Fuller & Co.	7 15
Ten gallons turpentine—Whittier, Fuller & Co.	5 75
Five gallons alcohol—Whittier, Fuller & Co.	11 50
Two cases machine oil, 15 gallons—Whittier, Fuller & Co.	9 75
Cartage on same—Whittier, Fuller & Co.	50

Six ebony knobs—The John Stock Sons	\$1 50
Six cases Starlight oil—Goldberg, Bowen & Co.	13 50
Freight on same—Goldberg, Bowen & Co.	96
One 8-foot stepladder—Farmers Union	3 20
Cutting six and one half cords wood—Frank Higuera	13 00
Cutting four cords wood—Andrea Herrera	8 00
Seven days' labor, painting—W. T. Maynard	24 50
Five days' labor, painting—W. T. Maynard	17 50
Four paint brushes—Farmers Union	3 00
Two Adams brushes—Farmers Union	2 50
Two hundred pounds white lead—Farmers Union	12 50
Five gallons boiled oil—Farmers Union	3 88
Turpentine	1 12
Three bundles shingles—Santa Clara Valley Mill and Lumber Co.	1 50
Mirror for photo use—H. A. Mathews	75
Eight hundred feet red wood—Santa Clara Valley Mill and Lumber Co.	28 00
Seventy-five feet cedar—Santa Clara Valley Mill and Lumber Co.	6 00
Two railroad lanterns—H. A. Mathews	2 00
One third red glass for same—H. A. Mathews	3 00
Four days' labor—Robt. Bennett	12 00
Five pounds quicksilver—Justinian Caire	5 50
Box for same—Justinian Caire	20
One gross large screws—The John Stock Sons	2 00
Six sheets zinc—The John Stock Sons	8 57
Eight pounds bronze metal—Wight & Branham	3 20
Labor on same—Wight & Branham	5 60
Twelve dozen lantern slide plates—S. C. Partridge	7 80
Box for same—S. C. Partridge	15
Two dozen ferro plates—S. C. Partridge	2 00
Nine rubber developing trays—S. C. Partridge	25 20
Eight glass graduates—S. C. Partridge	6 55
Three porcelain trays—S. C. Partridge	6 50
Ten pounds sulphite of soda—S. C. Partridge	5 00
Twenty ounces pyrogallic acid—S. C. Partridge	8 00
One gallon Atwood's alcohol—S. C. Partridge	1 96
Boxing same—S. C. Partridge	40
Enlarging copies from negatives—I. W. Taber	25 00
Freight and expressage—Farmers Union	43 75
Freight and expressage—Mount Hamilton Stage Co.	7 55
Telegrams—Harvard University	12 50
Telegrams—Western Union Telegraph Co.	1 74
Telegrams—Sunset Telephone Co.	90
Forty gallons machine oil—Whittier, Fuller & Co.	26 00
Cartage on same—Whittier, Fuller & Co.	25
Forty-nine and seven tenths gallons linseed oil—Whittier, Fuller & Co.	33 55
One barrel Prince's metallic—Whittier, Fuller & Co.	6 00
Cartage on same—Whittier, Fuller & Co.	50
Ten gallons turpentine—Whittier, Fuller & Co.	5 75
Cartage on same—Whittier, Fuller & Co.	25
Four Adams brushes—Geo. B. McKee & Co.	5 50
Indelible pencil and ink—Farmers Union	50
Mouse trap—Farmers Union	10
Three and one third dozen sandpaper—Farmers Union	50
One dozen penholders—Farmers Union	15
Two dozen wicks—Farmers Union	1 00
Four and one sixth dozen chimneys—Farmers Union	5 21
Two dozen lantern globes—Farmers Union	2 50
One hundred pounds white lead—Farmers Union	6 25
Two hundred pounds white lead—Farmers Union	12 50
Twenty-five pounds French zinc—Farmers Union	3 25
Two hundred pounds white lead—Farmers Union	12 50
Ten gallons boiled oil—Farmers Union	7 75
One gallon japan—Farmers Union	1 75
Fifty pounds yellow ochre—Farmers Union	2 50
One paint brush—Farmers Union	1 75
Fifty pounds litharge—Farmers Union	4 00
Four hundred pounds white lead—Farmers Union	25 00
Six barrels cement—Farmers Union	27 00
Cutting twenty-two and three fourths cords wood—Andrea Herrera	45 50
Cutting twenty-two cords wood—Frank Higuera	44 00
Ten cords oak wood, delivered—J. R. Kincaid	60 00
Gulching and hauling wood—Frank Higuera	53 00
Fourteen and one half days' labor in July—Frank Higuera	29 00
Twenty-six days' labor in August—Frank Higuera	52 00
Twenty-six days' labor in September—Chris. Shilling	52 00
Fifteen cases Starlight oil—Goldberg, Bowen & Co.	33 00

Brad cap record—Payot, Upham & Co.	\$18 50
Three reams manilla paper—Payot, Upham & Co.	8 40
One ad. file—Payot, Upham & Co.	94
Six record books—Payot, Upham & Co.	6 00
Sixty-two pieces black cloth—Samuel C. Partridge.	15 50
Five plate-holders—Samuel C. Partridge.	9 25
Twelve pairs brass butts—Davis & Co.	1 00
Eight dozen brass screws—Davis & Co.	35
Eight pairs brass hinges—Davis & Co.	80
Ten pairs blind flaps—Davis & Co.	60
Ten dozen brass screws—Davis & Co.	40
One thousand eight hundred and sixty-three feet lumber—Santa Clara Valley Mill and Lumber Co.	53 00
Ten barrels cement—Farmers Union	45 00
Postage stamps—S. W. Burnham	50 00
One hundred pounds metallic paint—Farmers Union	3 00
Six pounds twine—Farmers Union	1 20
Leather skirtings—Farmers Union	4 40
Yellow ochre—Farmers Union	8 00
One 2-inch brush—Farmers Union	35
Two pounds chrome yellow—Farmers Union	50
Two pounds B. sienna—Farmers Union	40
Ten gallons boiled oil—Farmers Union	7 75
Fifty pounds metallic paint—Farmers Union	2 00
One dozen coat hooks—Farmers Union	25
Half dozen ax handles—Farmers Union	1 75
Three scrap books—E. H. Guppy & Son	3 00
Eleven cubic yards sand—L. Bernal	44 00
Five and a half cubic yards sand—L. Bernal	22 00
One load slate rock—L. Bernal	1 00
Five and a half cubic yards sand—L. Bernal	22 00
Five and a half cubic yards sand—L. Bernal	22 00
Five and a half cubic yards sand—L. Bernal	22 00
Hauling from San José—L. Bernal	20 08
Hauling from San José—L. Bernal	12 51
Hauling from San José—L. Bernal	9 60
Hauling from San José—L. Bernal	12 28
Hauling from San José—L. Bernal	48
One double team three nights—L. F. Farnsworth	3 00
Fifty pounds waste—Union Iron Works	7 00
Ten dozen Seed plates—Samuel C. Partridge	24 15
Five hundred feet lumber—Santa Clara Valley Mill and Lumber Co.	10 00
One P. C. diary—Payot, Upham & Co.	2 50
Hauling three and a half cords wood—F. Higuera	7 00
Five hundred letter headings—C. A. Murdock & Co.	2 50
Glass pens—Draper Manufacturing Co.	2 00
One pair singletrees—W. T. Adel	3 50
Forty pounds wire finishing nails—Davis & Co.	2 90
Thirty papers wire brads—Davis & Co.	2 50
Thirty-one gross screws—Davis & Co.	10 40
One quarter gross clamps—Davis & Co.	45
One vise—Davis & Co.	1 25
One wrench—Davis & Co.	40
Hauling from San José—L. Bernal	9 94
One dozen cup'd turns—Davis & Co.	2 75
Three fourths dozen mortise bolts—Davis & Co.	2 25
Three sets casters—Davis & Co.	2 25
Six dozen Seed plates—S. C. Partridge	4 00
Telegram—Western Union Telegraph Co.	35
One hatchet—Farmers Union	75
Oxalic acid—Farmers Union	35
Two brushes—Farmers Union	10
One half dozen 8-ounce tacks—Farmers Union	20
Three thousand silver prints of eclipse—W. B. Tyler	150 00
Cartage and boxing on same—W. B. Tyler	1 50
Two thousand artotypes of plates A and B—Britton & Rey	24 00
One thousand artotypes of Professor Schaeberle's drawings—Britton & Rey	12 00
One thousand photo-lithographs of diagram plates—Britton & Rey	12 50
One thousand photo-lithographs of diagram plates—Britton & Rey	12 50
Two dozen stripping plates—Britton & Rey	5 45
Thirty sand sacks—L. Bernal	2 00
Hauling lumber from San José—L. Bernal	22 38
Hauling lumber and paint from San José—L. Bernal	17 82
Hauling wagon, etc., from San José—L. Bernal	15 11
One 2½-inch C valve—Farmers Union	5 00
Six mops—Farmers Union	90

One bar Castile soap—Farmers Union.....	\$0 50
Fifteen gallons raw linseed oil—Farmers Union	11 25
Five gallons boiled linseed oil—Farmers Union	3 88
One hundred packages matches—Farmers Union	3 00
Three thousand and sixty-two feet lumber—Santa Clara Valley Mill and Lum- ber Co.	80 88
Ten bundles shingles—Santa Clara Valley Mill and Lumber Co.	5 00
Four pieces lumber—Santa Clara Valley Mill and Lumber Co.	1 68
Two pieces lumber—Santa Clara Valley Mill and Lumber Co.	1 26
Five pieces lumber—Santa Clara Valley Mill and Lumber Co.	4 20
Eighteen pieces lumber—Santa Clara Valley Mill and Lumber Co.	4 28
Nine pieces lumber—Santa Clara Valley Mill and Lumber Co.	2 84
Three windows—Santa Clara Valley Mill and Lumber Co.	7 20
One farm gear, with rack, bed, and brake—Deere Implement Co.	125 75
Three and one fourth dozen letter pads—Payot, Upham & Co.	4 88
Four irons for singletree—Hatman & Normandin	1 25
Repairing wagon—Hatman & Normandin	1 00
New chain—Hatman & Normandin	1 00
Repairing wagon—Hatman & Normandin	3 50
Setting tires—Hatman & Normandin	3 00
Redriving spokes—Hatman & Normandin	1 00
Two brake blocks—Hatman & Normandin	1 25
Repairing telephone line—F. Higuera	2 00
Three Remington ribbons—Scott & Lee	3 00
Two rubber mats—Farmers Union	6 50
One pair dividers—A. Leitz & Co.	5 70
One spring-bow pen—A. Leitz & Co.	1 50
One spring-bow pencil—A. Leitz & Co.	1 50
Two Pittsburg lamps, complete—Pittsburg Brass Co.	9 20
One fourth dozen gum labels—Payot, Upham & Co.	34
Six lamp shades—Farmers Union	2 25
One rubber stamp—C. A. Klinkner & Co.	2 50
Cover for photo lens—Milton Campbell	3 50
Telegram to Harvard College—Western Union Telegraph Co.	1 00
One set drills—Davis & Co.	2 50
One pair calipers—Davis & Co.	50
Three punches—Davis & Co.	30
One half dozen quarts Carter's ink—Payot, Upham & Co.	2 53
One hundred sheets blotting paper—Payot, Upham & Co.	9 00
Nine pounds detail paper—Payot, Upham & Co.	1 35
Two hundred eclipse photos—W. B. Tyler	10 00
Cardboard and printing—W. B. Tyler	2 50
One screwdriver—Cherrie & Co.	1 75
Two pounds wax—Payot, Upham & Co.	1 00
Freight—E. A. Hubbard & Co.	1 25
Clamps for photo apparatus—Justinian Caire	2 00
Telephone message—Sunset Telegraph and Telephone Co.	25
One hundred gallons coal oil—Farmers Union	24 00
Lamp wicks—Farmers Union	15
Eight pounds putty—Farmers Union	32
Four dozen carb. plates—S. C. Partridge	12 00
Box for same—S. C. Partridge	15
Freight and expressage—Farmers Union	13 72
Freight and expressage—Farmers Union	11 60
Ten dozen transp. plates—The Eastman Co.	7 00
Ten dozen $\frac{1}{2}$ -transp. plates—The Eastman Co.	9 00
Four dozen $\frac{1}{4}$ -transp. plates—The Eastman Co.	13 60
One sixth dozen memorandum calendars—Payot, Upham & Co.	50
Postage—Payot, Upham & Co.	08
Six transfer frames—S. C. Partridge	3 90
One half dozen plain glass—S. C. Partridge	40
Two pieces ground glass—S. C. Partridge	80
Box—S. C. Partridge	15
Freight and expressage—L. Bernal	14 92
Telegrams—Western Union Telegraph Co.	2 42
Six loads sand—L. Bernal	3 00
One globe index—Payot, Upham & Co.	30
Two brushes—Farmers Union	80
Three papers tacks—Farmers Union	10
One hammer—Farmers Union	25
Four and one half gallons sperm oil—Farmers Union	4 50
Four pieces galvanized iron—Farmers Union	5 00
Forty new shoes—T. A. Carroll	20 00
Stage from and to San José, to carry Lick Observatory Committee—Mount Hamilton Stage Co.	20 00
Twelve trans. cases—Payot, Upham & Co.	4 20

Ten indexes—Payot, Upham & Co.	\$3 00
Eighty telegraph poles—Pacific Improvement Co.	146 60
Freight on same from Pajaro to San José—Pacific Improvement Co.	15 34
Two hundred 1½-inch pins—California Electrical Works	8 00
Two hundred insulators—California Electrical Works	14 00
Galvanized wire—California Electrical Works	9 50
Cartage on same—California Electrical Works	50
Labor repairing telegraph line—C. Sproat	63 00
Two hundred and eighty lag screws—C. Sproat	9 36
Washers—C. Sproat	40
Two bits—C. Sproat	90
Ten pounds nails—C. Sproat	50
One chisel—C. Sproat	50
Ten pounds solder—C. Sproat	1 80
Chalk—C. Sproat	05
Saw files—C. Sproat	25
Nine pounds rope—C. Sproat	1 53
One set blocks—C. Sproat	1 85
One tar brush—C. Sproat	65
One half gallon oil—C. Sproat	50
One hand vise—C. Sproat	3 00
Straighten tow—C. Sproat	10
Muriatic acid—C. Sproat	20
Coal tar—C. Sproat	1 00
Can—C. Sproat	05
Sharpening shoe bars—C. Sproat	1 20
Fitting pike poles—C. Sproat	50
Freight on wire, insulators, and pins—C. Sproat	45
Lumber—C. Sproat	25
Boarding three men for ten days—C. Sproat	30 00
Hauling, five trips—C. Sproat	7 50
Twelve pieces Oregon pine—Santa Clara Valley Mill and Lumber Co.	8 60
One hundred cross-arms—Santa Clara Valley Mill and Lumber Co.	18 00
Two pieces Oregon pine—Santa Clara Valley Mill and Lumber Co.	70
Twenty-eight linear feet Oregon pine—Santa Clara Valley Mill and Lumber Co.	25
Boarding three men for seventeen days—Charles Potter	51 00
Thirty-one days' labor on telegraph line—C. Sproat	81 00
Five days' teaming with two men—J. Wandell	55 00
One 5-inch damper—Farmers Union	25
Ten pounds sulphur soda—S. C. Partridge	5 00
Ten pounds carbonate soda—S. C. Partridge	5 50
Forty ounces pyro—S. C. Partridge	16 00
Four ounces pruss. potash—S. C. Partridge	35
Three dozen ferrotype plates—S. C. Partridge	3 00
Six paste brushes—S. C. Partridge	50
One keg hypo—S. C. Partridge	5 05
Box—S. C. Partridge	15
Five hundred charts—Draper Manufacturing Co.	15 00
Hauling poles—Mount Hamilton Stage Co.	5 00
Thirty hours' work copying—A. B. Pierce	7 50
Postage stamps—S. W. Burnham	50 00
Freighting—Mount Hamilton Stage Co.	4 20
Freighting—Mount Hamilton Stage Co.	6 30
Freighting—Mount Hamilton Stage Co.	1 60
Repairing wagon—Hatman & Normandin	4 00
One box pens—Payot, Upham & Co.	90
Five pounds black paint—Farmers Union	1 25
Six cans chloride of lime—Farmers Union	75
Lamp wicks—Farmers Union	10
Soap—Farmers Union	1 00
Six packages tacks—Farmers Union	25
Six balls twine—Farmers Union	40
One hundred brass tacks—Farmers Union	15
Matches—Farmers Union	1 50
One Hazel stove—Mangrum & Otter	9 00
Five hundred feet lumber—Santa Clara Valley Mill and Lumber Co.	16 35
Nine hundred and eighty-one feet lumber—Santa Clara Valley Mill and Lumber Co.	29 65
Eight poles—Santa Clara Valley Mill and Lumber Co.	17 20
Eight bundles shingles—Santa Clara Valley Mill and Lumber Co.	4 00
One dozen sheets needle paper—S. C. Partridge	35
One Nature—B. Westermann & Co.	6 00
One Sidereal Messenger—B. Westermann & Co.	3 00
One Observatory—B. Westermann & Co.	3 50
One Bulletin Astronom.—B. Westermann & Co.	4 75
One Astronomical Journal—B. Westermann & Co.	5 50

One Journal Mathematik—B. Westermann & Co.	\$7 00
One Astronom Nachrichten—B. Westermann & Co.	8 00
Hauling from San José—J. Wandell	25
Freight paid—J. Wandell	40
Hauling eight telegraph poles from San José—J. Wandell	12 80
Hauling one box from San José—J. Wandell	08
Hauling five cases oil from San José—J. Wandell	1 80
Hauling wagon from San José—J. Wandell	2 00
Hauling lumber from San José—J. Wandell	2 98
Hauling wagon from San José—J. Wandell	2 00
Hauling five cases oil from San José—J. Wandell	1 60
Expressage, month of November—Farmers Union	10 25
Repairs to plow—Farmers Union	3 00
Four barrels cement—Farmers Union	18 00
Two files—Farmers Union	40
One quart muriatic acid—Farmers Union	50
Six letter books—Payot, Upham & Co.	8 10
One B. S. whip—Farmers Union	1 00
Five hundred and five pounds charcoal—Farmers Union	5 05
Nine $\frac{3}{4}$ -inch fittings—Farmers Union	1 17
Twelve $\frac{3}{4}$ -inch nipples—Farmers Union	96
Six $\frac{3}{4}$ -inch unions—Farmers Union	1 68
One cask alcohol—Farmers Union	13 00
Telegram to Washington—Western Union Telegraph Co.	1 56
Telegram to San Francisco—Western Union Telegraph Co.	25
Telegram to San Francisco—Western Union Telegraph Co.	66
One door—Santa Clara Valley Mill and Lumber Co.	2 00
One sash door—Santa Clara Valley Mill and Lumber Co.	2 90
One hundred and four feet Spanish cedar—Santa Clara Valley Mill and Lumber Co.	15 60
Fifty feet hose—Farmers Union	10 00
Five thousand letter heads—C. A. Murdock & Co.	16 25
Two electros—C. A. Murdock & Co.	1 00
Freight on telescope from Pittsburg—Farmers Union	116 80
Hauling six thousand seven hundred brick—John Geddis	18 75
Binding fifteen volumes—Hicks-Judd Co.	9 75
Binding four volumes—Hicks-Judd Co.	2 00
Binding one volume—Hicks-Judd Co.	70
Binding two volumes—Hicks-Judd Co.	1 00
Binding twenty-seven volumes—Hicks-Judd Co.	17 55
Binding two volumes—Hicks-Judd Co.	70
Binding three volumes—Hicks-Judd Co.	90
Binding twenty-seven volumes—Hicks-Judd Co.	24 30
Binding eight volumes—Hicks-Judd Co.	10 80
Binding one volume—Hicks-Judd Co.	1 05
Binding two volumes—Hicks-Judd Co.	1 80
Lettering—Hicks-Judd Co.	50
Repairing one book—Hicks-Judd Co.	75
One portfolio—Hicks-Judd Co.	1 50
Bill of Friedlander & Sons, in marks; total in dollars and cents:	Marks.
Index to Vols. 1-15 of Sirius	2.00
Laska's Formalen der Mathematik, 1-3	16.65
Bertrand's Calcul des Probabilités	11.00
Tisserand's Traité de Mecanique Celeste, 2 vols.	48.10
Koukoly's Himmels Photographie	10.80
Pendelberg's Lenses and System of Lenses	5.30
Zoellner's Photometrie Himmels	6.00
Postage	6.60
	M. 106.45
Index to Journal of Mathematics—B. Westermann & Co.	27 97
Vol. 25 of Encyclopædia Britannica—J. Dewing Co.	1 00
Expressage—Farmers Union	6 00
Three dozen carbon paper—Scott & Brannan	18 85
One shovel—Farmers Union	1 00
Six nickel transparency frames—S. C. Partridge	40
One half dozen plain glass for covers—S. C. Partridge	3 90
Box for same—S. C. Partridge	40
One fourth ream copy paper—Payot, Upham & Co.	10
One quart black ink—Payot, Upham & Co.	1 00
One lantern—Justinian Cairo	75
Shoeing mules—T. A. Carroll	3 00
Freight from San José—J. Wandell	4 00
Freight on electric plant—J. Wandell	2 30
Freight on electric goods—J. Wandell	12 00
Freight charges on electric goods paid—J. Wandell	9 28
	4 46

One flint glass prism—Steinheil Sohne	\$11 12
Repairing harness—Victor Laederich	1 00
One jeweler's eyeglass—F. H. McConnell	1 00
Two pairs smoked glass spectacles—F. H. McConnell	2 00
One floor brush—Farmers Union	3 00
One counter brush—Farmers Union	75
Ten cases Starlight oil—Goldberg, Bowen & Co.	24 50
Freight on same—Goldberg, Bowen & Co.	1 60
Freight charges—Farmers Union	42
Repairs on microscope holder—Wight & Branham ..	2 00
One hundred and ninety-nine and a half feet weather strip—The John Stock Sons	14 97
Refilling one level—A. Leitz & Co.	2 50
Box for same—A. Leitz & Co.	30
Freightage, month of September, 1890—Mount Hamilton Stage Co.	9 50
Expressage, month of January, 1891—Farmers Union ..	8 60
Forty-four pounds waste—Farmers Union	6 60
Hauling from San José—J. R. Kincaid	4 63
Hauling from San José—John Geddis	6 05
Hauling from San José—Mount Hamilton Stage Co.	10 51
Hauling from San José—Mount Hamilton Stage Co.	3 65
Freight and hauling on camera box and lens, and Willard lens, and mounting	
Crocker telescope—John A. Brashear	17 65
One name plate—Paul Seilers Electrical Works	4 00
Sixty feet F. and D. wire—Paul Seilers Electrical Works	2 10
Expressage—Payot, Upham & Co.	30
One box pens—Payot, Upham & Co.	1 25
Postage on same—Payot, Upham & Co.	04
One hammer—Farmers Union	50
Fire clay—Farmers Union	50
One box F. W. candles—Farmers Union	2 65
Fifteen 1-inch fittings—Farmers Union	1 95
Twelve 1-inch nipples—Farmers Union	1 26
Five and a half days' labor in February—Albert King	11 00
Six days' hire of horse and wagon—C. Sproat	4 50
Six days' labor—C. Sproat	15 00
Six days' labor—Mr. Emery	12 00
Stage fare two men, San José to Grand View House—C. Sproat	1 00
One week's board two men—Charles Potter	14 00
Five hundred feet redwood boards—Santa Clara Valley Mill and Lumber Co.	14 00
Telegram—Farmers Union	1 00
Two lights glass—Farmers Union	3 50
Six transparency frames—S. C. Partridge	3 90
Two inkstands and postage—Payot, Upham & Co.	34
Freightage—John Geddis	1 81
Adapter for telescope—A. Leitz & Co.	1 50
Two rubber penholders—C. Beach	50
One 2½-inch globe valve—Farmers Union	5 00
Fifty flower pots—Farmers Union	3 00
Telegram to Ann Arbor—Western Union Telegraph Co.	1 07
Hauling from San José—John Geddis	4 14
Ten barrels cement—Farmers Union	41 50
Twenty-three and one half days' labor—A. King	47 00
One crank for windmill—J. Blackwell & Co.	12 00
One casting for windmill—J. Blackwell & Co.	8 00
Boxes for windmill—J. Blackwell & Co.	1 50
Labor on same—J. Blackwell & Co.	5 00
Three hundred and ninety-eight pounds rye—Farmers Union	6 37
Three hundred and forty-five pounds barley—Farmers Union	5 52
One hundred pounds wheat—Farmers Union	1 50
Labor repairing telegraph line—C. Sproat	35 25
Ten days' board for two men—C. Potter	10 00
Eleven days' board for one horse—C. Potter	5 50
Two thousand and eighty-five feet lumber—Glenwood Lumber Co.	72 97
Three pounds twine—Farmers Union	60
One piece steel—Wight & Branham	50
Two thousand letter heads—Payot, Upham & Co.	5 00
Freighting for month of February—Mount Hamilton Stage Co.	6 80
Three pieces track ring—Union Iron Works	10 00
Freighting from San José—John Geddis	3 43
Telephone message—Sunset Telegraph and Telephone Co.	35
Postage stamps—S. W. Burnham	30 00
Fifty pounds white lead—Farmers Union	4 25
Five gallons boiled linseed oil—Farmers Union	3 63
One hoop driver and handle—Farmers Union	85
Nine bundles band iron—Davis & Co.	32 15
One level vial—G. N. Saegmuller	50 00

Seven days' board for two men—C. Potter	\$14 00
Six days' board for one horse—C. Potter	3 00
Six 2½-inch nipples—Mount Hamilton Store	3 38
Six 2½-inch unions—Mount Hamilton Store	9 00
One galvanized strainer—Mount Hamilton Store	1 00
Eighteen days' labor of men—C. Sproat	41 50
Hauling telegraph poles—C. Sproat	2 75
Two stage fares—C. Sproat	2 00
Fifty cords wood—J. Wandell	300 00
One week's board for two men—C. Potter	14 00
Four days' board for one man—C. Potter	4 00
One day's horse board—C. Potter	50
Bill of Glenwood Lumber Co:	
One hundred and twenty-six pieces 1x6x16 T. and G. lumber	\$30 24
Five pieces 2x4x16 lumber	2 10
Two pieces 2x3x12 lumber	42
Express bill for February, 1891—Farmers Union	32 78
One half dozen bottles watch oil—F. H. McConnell	5 75
Two telegrams to Cambridge—Western Union Telegraph Co.	1 50
One stamp—C. A. Klinkner & Co.	2 21
Five gallons Star dynamo oil—Whittier, Fuller & Co.	1 50
Freight on same—Whittier, Fuller & Co.	3 00
Two bottles Dow's paste and box—Samuel C. Partridge	30
Six dozen manilla note pads—Payot, Upham & Co.	1 10
Three dozen manilla letter pads—Payot, Upham & Co.	4 00
Freighting, month of March—Mount Hamilton Stage Co.	4 00
Express bill for March—Farmers Union	6 40
Three plain shades—Rucker Bros.	2 85
Eighty feet redwood—Santa Clara Valley Mill and Lumber Co.	2 90
Hauling lumber from San José—L. Bernal	3 00
Hauling ten pounds cement from San José—L. Bernal	13 24
Hauling iron straps from San José—L. Bernal	16 00
Hauling windmill parts from San José—L. Bernal	4 17
Hauling fifteen barrels cement from San José—L. Bernal	1 22
Hauling fifteen barrels cement from San José—L. Bernal	24 00
Hauling thirty-five thousand four hundred and fifty-two brick from San José—L. Bernal	24 00
Twenty-three days' labor in April—A. King	88 63
Sixteen days' labor on reservoir—A. King	46 00
Hauling five barrels cement from San José—L. Bernal	32 00
Hauling four thousand one hundred and seventy-five pounds lumber from San José—L. Bernal	8 00
Hauling eighteen barrels cement from San José—L. Bernal	16 70
Hauling seven thousand brick from San José—L. Bernal	28 80
Hauling twelve barrels cement from San José—L. Bernal	17 50
Bill of the Hicks-Judd Co. for binding books:	19 20
One Transactions, 1889	\$1 35
Seven 8vos	4 55
Five 4tos	4 50
One folio	1 50
Two 4tos	2 70
One 8vo	60
Ten "Nature"	6 50
Two 8vos	1 20
Bill of B. Westermann & Co.:	22 90
Index to Journal of Franklin Institute	\$5 00
Hyde's Directional Calculus	2 15
Rowland's Photographs of Solar Spectrums	20 00
Spoor's Workshop Receipts	6 40
Pingre's Cometographie	5 40
Index of Royal Society of Edinburgh	5 47
Proctor's Old and New Astronomy	7 92
Chambers' Astronomy	5 25
Index (Comptes Rendus) of Paris Academy	3 75
Bill of T. E. Snell for boarding and lodging men while repairing telegraph line:	61 34
Five beds	\$2 50
Thirteen meals	3 25
Fifty-six barrels cement—Mount Hamilton Store	5 75
Twelve barrels cement—E. J. Archambeault	232 40
One keg spikes—E. J. Archambeault	49 80
Five gallons turpentine—E. J. Archambeault	2 95
	3 75

Marigold seed—E. J. Archambeault	\$0 50
Freighting for April—Mount Hamilton Stage Co.	7 00
Freighting for April—E. J. Archambeault	1 40
Storage on electrical goods—E. J. Archambeault	1 00
Washing towels—E. J. Archambeault	25
Fifty-six pieces 1x12x12 lumber—Glenwood Lumber Co.	20 00
Postage stamps—S. W. Burnham	18 00
Repairing brass frame—Wight & Branham	6 40
Three 8-10 Corbett's "A" plates and box—S. C. Partridge	8 55
One globe ventilator—Globe Ventilator Co.	6 40
One comet telegram to Cambridge, Mass.—Western Union Telegraph Co.	1 77
Hauling iron track for dome from San José—L. Bernal	14
Hauling one box books from San José—L. Bernal	58
One hundred feet $\frac{3}{8}$ -inch cotton rope—Pelton Water Wheel Co.	2 00
One dozen Faber's blue pencils, and postage—Payot, Upham & Co.	81
One rubber triangle, 45°—Payot, Upham & Co.	90
One eighth pound bevel rubber—Payot, Upham & Co.	15
One sponge rubber eraser—Payot, Upham & Co.	60
Five hundred postal cards—Recorder's Office, University of California.	5 00
Four pounds putty—Farmers Union	28
Hauling from San José—L. Bernal	70
One hundred gallons Starlight oil—Goldberg, Bowen & Co.	23 00
Freight on same—Goldberg, Bowen & Co.	70
Title page and index to Observatory, Vol. 9—B. Westermann & Co.	32
Two title pages and indexes—A. S. Clark	75
Twenty-five numbers of "Nature"—A. S. Clark	2 50
Postage—A. S. Clark	08
One Bull. de la Soc. Astronom de France—B. Westermann & Co.	30
"Nature," Vol. 34—B. Westermann & Co.	20
Generalregister der Bünde der Astronom Nachrichten—R. Friedlander & Son.	5 03
Four pamphlets on "Parallaxes"—R. Friedlander & Son	1 64
One Elements of Astronomy—B. Westermann & Co.	1 52
One Chambers' Astronomy—B. Westermann & Co.	8 75
One Dreyer's Tycher, etc.—B. Westermann & Co.	2 80
One Clarke's System of Stars—B. Westermann & Co.	5 60
One Science Spectralanalyse d. Gertirm—B. Westermann & Co.	3 68
One Watts' Index to Spectra—B. Westermann & Co.	3 90
One Aldis' Geom. Optics—B. Westermann & Co.	90
Souchon's Astronomie Theorique—B. Westermann & Co.	3 52
One Berliner's Astronomical Journal—B. Westermann & Co.	3 19

\$6,922 79APPENDIX No. 10—*Department of Military Science.*

One copy Winthrop's Military Law—U. S. Infantry and Cavalry School.	\$2 75
One copy Shaw's Elements of Tactics—U. S. Infantry and Cavalry School.	2 25
One copy Mayne's Infantry Fire Tactics—U. S. Infantry and Cavalry School.	1 50
One dozen board clips—Dutton & Partridge	4 50
One metronome—Kohler & Chase	2 50
Two drums—Kohler & Chase	10 00
One Dodge's Alexander the Great—Hunt & Eaton	3 50
One Mercer's Art of War—Hunt & Eaton	3 25
One Submarine Mines and Torpedoes—Hunt & Eaton	3 25
Ten copies Art of War—Hunt & Eaton	13 30
Postage and commission—Hunt & Eaton	1 20
Bill of E. G. Allen, in pounds; total in dollars and cents:	s. d.
McKinlay's Gunnery	3 0
Brackenburg's works	9 0
Clery's Minor Tactics	8 6
Hohenlobe's Artillery	5 8
Hohenlobe's Infantry	4 6
Postage and packing	2 7
Commission	£1 13 3
	1 8
	£1 14 11
Two white signal flags—D. Norcross & Co.	8 50
Two red signal flags—D. Norcross & Co.	1 80
Four trumpets—Kohler & Chase	10 00
One Mandes' Tactics—Infantry and Cavalry School	1 60
Three fourths dozen whisk brooms—G. W. Armes & Co.	1 50
One office basket—G. W. Armes & Co.	1 17
Four signal flags—D. Norcross & Co.	2 00
Postage—D. Norcross & Co.	06

Two storm flags—D. Norcross & Co.	\$12 00
One coast flag—D. Norcross & Co.	20 00
Postage stamps—N. B. Byrne	50
Expressage—Patterson & Co.	50
Two field glasses—California Optical Co.	25 50
Expressage—Patterson & Co.	1 70
Three brushes—L. D. Stone & Co.	1 50
Twelve cans blacking—L. D. Stone & Co.	4 80
One gallon cylinder oil—L. D. Stone & Co.	2 50
Two trumpets—Kohler & Chase	5 00
Four infantry bugle cords—D. Norcross & Co.	6 00
Two infantry bugle cords—D. Norcross & Co.	3 00
Expressage—Patterson & Co.	1 75
One bottle red ink—Students' Coöperative Association	10
One pencil rubber—Students' Coöperative Association	15
Three dozen pen points—Students' Coöperative Association	30
One box fasteners—Students' Coöperative Association	25
One note pad—Students' Coöperative Association	25
Three note books—Students' Coöperative Association	25
One No. 60 ink pad—Dutton & Partridge	25
One No. 4,647 inkstand—Dutton & Partridge	1 50
Two knife erasers—Dutton & Partridge	1 00
One quart Carter's fluid—Dutton & Partridge	50
One quart Carter's copying fluid—Dutton & Partridge	75
One penknife—Dutton & Partridge	30
One ruling pen—Dutton & Partridge	1 15
One ink well—Dutton & Partridge	25
One box No. 13 bands—Dutton & Partridge	20
One box No. 17 bands—Dutton & Partridge	25
Two No. 253 mems—Dutton & Partridge	80
Two No. 249 mems—Dutton & Partridge	50
Two Moore's blotters—Dutton & Partridge	50
Copy of certificate of incorporation—State of California	2 75
Expressage—Wells, Fargo & Co.	40
Taking acknowledgments—L. D. Craig	2 00
Clerk's fees (certificate to signature)—L. S. B. Sawyer	1 00
Expressage—Patterson & Co.	1 25
Three Eb alto horns—Matthias Gray Co.	48 50
Two Bb tenor horns—Matthias Gray Co.	30 00
One baritone—Matthias Gray Co.	16 50
One Eb bass—Matthias Gray Co.	25 00
One snare drum—Matthias Gray Co.	8 00
One Eb piccolo—Kohler & Chase	5 00
One Eb clarinet—Kohler & Chase	15 00
One Bb clarinet—Kohler & Chase	15 00
Three Bb cornets—Kohler & Chase	51 80
One Bb bass—Kohler & Chase	20 00
One 32-inch bass drum—Kohler & Chase	12 00
One pair cymbals—Kohler & Chase	4 00
Sixteen music stands—Kohler & Chase	12 00
Eighteen band books—Kohler & Chase	9 00
One half dozen clarinet reeds—Kohler & Chase	63
One piccolo music rack—Kohler & Chase	75
Two clarinet music racks—Kohler & Chase	1 50
Four orchestra selections—Matthias Gray Co.	2 00
Lantern exhibition—Morris & Dann	15 00
One telephone message—Morris & Dann	50
Expressage—Patterson & Co.	1 25
Expressage—Wells, Fargo & Co.	50
Exchange in drum—Matthias Gray Co.	2 00
Expressage—Wells, Fargo & Co.	65
Band teacher, five days—L. von der Mehden	25 00
Manuals Guard Duty—J. D. Hammond, Agent	1 58
Seven army belts—D. Norcross & Co.	24 50
Gold medal—Geo. C. Shreve & Co.	10 00
Silver medal—Geo. C. Shreve & Co.	6 00
Band teacher, three days—L. von der Mehden	15 00
One and one fourth yards nun's veiling—Taft & Pennoyer	1 40
Stationery—Students' Coöperative Association	1 00
	<hr/>
	\$553 64

APPENDIX No. 11—*Department of Mineralogy.*

One map of Alameda County—S. W. Dunn		\$5 00
One Blair camera, with tripod—S. C. Partridge	\$45 00	
One Beck lens—S. C. Partridge	50 00	
One Prosch triplex shuttle—S. C. Partridge	16 00	
One dozen Seed plates—S. C. Partridge	1 90	
Two extra Blair holders—S. C. Partridge	3 30	
	\$116 20	
Discount	5 70	
Expressage—Patterson & Co.		110 50
One pair electro magnets—Henry Grosse		1 50
Expressage—Patterson & Co.		10 00
Expressage—Patterson & Co.		75
Expressage—Patterson & Co.		1 25
One map of Contra Costa County—Estate of A. J. Leary		10 00
Expressage—Patterson & Co.		25
One ounce cryst. nitr. cobalt—Justinian Caire		75
Two dozen charcoal sticks—Justinian Caire		90
One pair forceps—Justinian Caire		20
One pair eng. plat. tips—Justinian Caire		1 50
One steel anvil—Justinian Caire		1 00
Two dozen B. P. mattresses—Justinian Caire		90
Two files—Justinian Caire		25
Iron wire—Justinian Caire		25
Fifty feet rubber tube—Justinian Caire		2 00
One dozen test tubes—Justinian Caire		40
One fourth pound C. P. borax—Justinian Caire		38
One pound tinfoil—Justinian Caire		27
Two ounces nitrate of potash—Justinian Caire		25
Four ounces iodide of potash—Justinian Caire		80
One ounce oxal. nickel—Justinian Caire		65
One dozen tumeric—Justinian Caire		45
Four pounds ammonia—Justinian Caire		1 12
One half pound ammonia carb.—Justinian Caire		30
One half pound caustic potash—Justinian Caire		40
One pound ammonia chloride—Justinian Caire		54
One fourth pound barium chloride—Justinian Caire		15
One ounce nitrate silver—Justinian Caire		90
One ounce chlor. platinum—Justinian Caire		1 00
One ounce molybdate ammonia—Justinian Caire		65
Six clay triangles—Justinian Caire		60
Six towels—Justinian Caire		1 50
Two spatulas—Justinian Caire		40
Six test-tube cleaners—Justinian Caire		50
Three hornspoons—Justinian Caire		30
Fluorspar—Justinian Caire		25
Rubber disk—Justinian Caire		70
Arsenic—Justinian Caire		20
Starch—Justinian Caire		25
Two brushes—Justinian Caire		40
One mortar brush—Justinian Caire		45
Bichl. potash—Justinian Caire		45
Canada balsam—Justinian Caire		75
Shellac—Justinian Caire		25
Glycerine—Justinian Caire		25
Oil of cassiar—Justinian Caire		50
Oil of almond—Justinian Caire		50
One diamond writer—Justinian Caire		2 00
One Grenet battery—Justinian Caire		12 00
One clay furnace—Justinian Caire		10 90
One Jolly balance—Justinian Caire		16 00
One Westphal specific gravity balance—Justinian Caire		23 00
One ounce May ribbon—Justinian Caire		1 00
One platinum triangle, ten gram—Justinian Caire		7 00
Three slitting disk lapidary—Justinian Caire		7 00
One blast lamp—Justinian Caire		3 20
Ten Bunsen burners—Justinian Caire		5 00
Ten Bunsen tips—Justinian Caire		2 00
Emery—Justinian Caire		1 30
Two Arkansas slips—Justinian Caire		1 80
Two hundred pieces cut plate glass—Justinian Caire		4 50
		\$258 51

To Department of Physics.

Freight—Southern Pacific Co.		\$7 40
Expressage—Patterson & Co.		1 00
Bill of James W. Queen & Co., Philadelphia:		
Three Carhast Clark standard cells	\$45 00	
Boxing and packing same	25	
Three thermometers	29 25	
One absolute galvanometer	39 60	
One electrical calorimeter	26 64	
One Wheatstone bridge	43 20	
One earth inductor	127 20	
One calorimeter	33 12	
One calorimeter	36 00	
Three MM. plates	1 74	
Three cylinders	5 79	
One steel bar	5 79	
One water battery	17 28	
One thermometer battery	33 60	
One Zambone's piles	17 28	
Two volumenometers	23 04	
Three resistance boxes	152 64	
One centi-ampere balance	168 00	
Boxing and packing same	2 00	
Custom House storage on same	50	
One Ayrton-Perry lechometer	58 00	
One speed indicator	39 40	
Box and packing for same	50	
One Wineshurst electrical machine	75 00	
Box and packing for same	2 75	
Cases, package, freight, insurance, drayage, and Custom House charges	124 09	
		1,107 66
Expressage—Patterson & Co.		50
One half dozen hand screws—Osborn & Alexander		1 63
Two and one half quires emery paper		1 00
Expressage—Patterson & Co.		50
Mimograph stencils and ink—F. Slate		1 85
Coal oil and matches—F. Slate		1 50
Expressage—Patterson & Co.		50
Six cells prism battery—California Electrical Works		8 64
Box—California Electrical Works		25
Two sine tangent galvanometers—E. D. Greeley & Co.		142 50
Expressage—Wells, Fargo & Co.		8 25
Exchange on draft—L. Sloss, Treasurer		1 00
One flask quicksilver—Justinian Caire		54 50
One gallon benzine—Justinian Caire		40
Four thousand four hundred cubic feet gas—Oakland Gas Co.		11 00
Bill of James W. Queen & Co.:	£ s. d.	
One phonometer, including candle, balance, and four Lithby screws	15 10 0	
One experimental meter	8 8 0	
One experimental governor, etc.	11 0 0	
One King's gauge	4 0 0	
One standard argand burner	10 6	
Cases and packing	1 10 0	
Consul's fee	5 0	
Cartage to steamer	3 6	
	£46 11 0	
£46 11s 0d	981 0	
Commission of 2½ per cent	23 3	
	954 3	
954s 3d at 24½ cents per shilling	\$233 79	
Freight and charges	7 75	
Insurance	1 75	
Entry fee and commission	1 50	
Cartage	75	
One D'Arsonville galvanometer	65 00	
Box and packing	1 00	
		311 54
Expressage—Patterson & Co.		1 50
Custom House entry two cases of instruments—G. W. Reed		4 00
		\$1,667 12

To Department of Civil Engineering.

One copy "Agriculture of Massachusetts," 1869-70—Massachusetts State Board of Agriculture	\$1 00
Telegram—Western Union Telegraph Co.	55
Telephone—Sunset Telephone Co.	50
One Thacher's "Calculator"—Kenfel & Esser Co.	27 00
One whisk broom—Feigenbaum & Co.	25
Expressage—Wells, Fargo & Co.	3 50
Six pairs butts—Savage Bros.	40
Six knobs—Savage Bros.	20
Six draw pulls—Savage Bros.	25
One gross screws—Savage Bros.	25
Two brass locks—Savage Bros.	1 00
Eighteen straps—O. Emaly & Sons	2 70
Material for glass case—Niehaus Bros. & Co.	20 00
Traveling expenses—Carl Rabe	1 20
Bill of Mayer & Muller, in marks; total in dollars and cents:	
Berliner Astronom Tahrbuch, 1890-91	M. 21.60
Porto	2.00
	M. 23.60
One hank sash cord—Osborn & Alexander	5 74
Three rosewood handles—Osborn & Alexander	85
Boring same—Osborn & Alexander	75
One lot pens—Le Count Bros.	25
One graduated spirit level—A. Lietz & Co.	10 00
One clamp screw—A. Lietz & Co.	1 00
One burner—A. S. Graff & Co.	90
Twenty gallons Elaine oil—J. McClain	6 40
Nineteen yards Duplex drawing paper—E. Denny & Co.	1 20
Ten yards Paragon drawing paper—E. Denny & Co.	8 85
One roll tracing cloth—E. Denny & Co.	7 50
One half dozen Hunter's axes—Osborn & Alexander	4 50
One half dozen ax handles—Osborn & Alexander	60
One half dozen chalk lines—Osborn & Alexander	60
One vise—Osborn & Alexander	50
One jeweler's hammer—Osborn & Alexander	65
One pair cutting pliers—Osborn & Alexander	75
Two files—Osborn & Alexander	50
Two sets circular stencils—C. A. Klinkner & Co.	5 00
One map of California—S. W. Dunn	2 00
Traveling expenses—Carl Rabe	25
Repairing clock—Alfred Berg	75
Cleaning and regulating sidereal chronometer—F. H. McConnell	10 00
Expressage—Patterson & Co.	35
One 50-foot steel tape—Buff & Berger	6 10
Three $\frac{1}{2}$ -pint cans mixed paint—T. J. Bass & Co.	70
Two brushes—T. J. Bass & Co.	30
One bottle turpentine—T. J. Bass & Co.	15
Thirty-three and one third hours clerical work—W. C. Allen	10 00
Enlarging holes in plate glass—F. M. Farwell	5 00
One graduated level—A. Lietz & Co.	4 00
One roll blue print—E. Denny & Co.	3 00
One desk scraper—Savage Bros.	65
Traveling expenses—Carl Rabe	45
Repairing weather vane—Dalziel & Moller	75
Repairing two electric burners—California Electrical Works	4 50
One incandescent burner—California Electrical Works	2 50
Sal ammoniac—California Electrical Works	2 30
Six 4-throw switches—California Electrical Works	4 50
Chromate of potassium—California Electrical Works	4 00
Box for same—California Electrical Works	15
Expressage—Patterson & Co.	1 50
Three 15-M accumulators—Pacific Electrical Storage Co.	45 00
Chimneys—J. McClain	25
Traveling expenses—Carl Rabe	25
Traveling expenses—Carl Rabe	25
Traveling expenses—Carl Rabe	25
One brush—Buchanan Bros.	25
Expressage—Patterson & Co.	2 00
Cleaning and repairing seismograph—F. H. McConnell	10 00
Expressage—Patterson & Co.	2 50
Expressage—Wells, Fargo & Co.	25
Ten yards crash toweling—R. Weill & Son	1 00
One pair shears—Dutton & Partridge	2 00

Replacing worn parts, cleaning, repairing, and adjusting the Grey-Milne seismograph—Joseph Le Conte, Jr.	\$25 00
Two shears ground—A. Erlandsen	40
Six No. 2 leader chimneys—Nathan, Dohrmann & Co.	90
Repairing level—A. Leitz & Co.	2 00
Salaries for the year ending June 30, 1891	12,001 72
	<u>\$12,273 51</u>

To Department of Physical Culture.

Expressage—Patterson & Co.	\$1 00
One Flint's Muscular Power—Samuel Carson & Co.	1 00
One Richardson's Diseases—Samuel Carson & Co.	2 00
One Davis' Hygiene—Samuel Carson & Co.	1 25
One La Grange's Exercise—Samuel Carson & Co.	1 75
Thirty-seven hours' clerical service—D. M. Matteson	11 00
Putting in running track in Gymnasium, as per contract—Miller & Hope	530 00
Putting in beam—Miller & Hope	35 00
Two hundred and fifty feet hair felt material for running track—Narragansett Machine Co.	187 50
Freight—Southern Pacific Co.	30 40
Expressage for month of August—Patterson & Co.	2 50
Laying running track—McGovern & Cahill	50 00
One quarter dozen Shannon files—Le Count Bros.	\$4 20
One quarter dozen clips—Le Count Bros.	30
One record book—Le Count Bros.	1 65
One Shannon perforator—Le Count Bros.	60
One Shannon cover—Le Count Bros.	35

Less 3 per cent. 20

One gallon sperm oil—Kelsey Bros.	6 90
One can kerosene—Kelsey Bros.	1 70
Two 4-pint oilers—Kelsey Bros.	1 50
One funnel—Kelsey Bros.	55
Expressage—Patterson & Co.	10
Freight from New York—Southern Pacific Co.	3 25
Three steel measuring tapes—Justinian Caire	43 93
Bill of Narragansett Machine Co:	5 25

Three trapezes and ropes	\$21 00
One bar	8 00
One ankle machine	10 00
One ankle machine	20 00
One sculling machine	10 00
One rope	12 00
One center clamp	10 00
One test spring	15 00
Two belts	30 00
One board and cleat	10 00
One hitch and kick	5 00
Two shoes	5 00
Two straps	1 50
One hand spring bar	10 00
Extra rope on trapeze	3 00

Less 25 per cent. 42 62

Two volumes Modern Gymnastic Exercises	\$127 88
	1 85

Less cost of material purchased and one bar 16 50

Typewriting—Hattie L. Phelps	113 23
One bottle liniment—Daggett & Co.	6 50
One bottle alcohol—Daggett & Co.	1 25
One instrument case—Daggett & Co.	1 25
Assorted bandages—Daggett & Co.	2 00
One medical dictionary—Samuel Carson & Co.	2 00
Six receipt books—Kelsey Bros.	7 50
Screw for machine—Kelsey Bros.	1 50
Two stay rods in Gymnasium—R. D. Miller & Co.	25
Twilled muslin for running track—McGovern & Cahill	20 00
Labor on athletic grounds—James Stutt	55 00
	9 50

Labor on athletic grounds—Robert Forbes	\$6 50
Two wood-seat chairs—J. T. Baum	1 00
Iron work—Nelson & McLellan	35
Three gallons turpentine—Pierce & Co.	1 50
Three gallons glue—Pierce & Co.	6 00
One box doses—Pierce & Co.	1 00
One garden roller—Pierce & Co.	40 00
Six hanks sash cord—Dunham, Carrigan & Hayden Co.	6 00
One lantern—Dunham, Carrigan & Hayden Co.	1 50
Three and one half dozen sash locks—Dunham, Carrigan & Hayden Co.	4 38
One screwdriver—Dunham, Carrigan & Hayden Co.	35
Seventy-two hours' clerical work—D. M. Matteson	21 50
Eighteen hours' clerical work—E. H. Barker	5 40
One vaulting board—Narragansett Machine Co.	8 00
On: Classified Gymnasium—The W. F. Adams Co.	1 00
Expressage—Wells, Fargo & Co.	2 50
One striking bag—H. N. Cook	6 50
One striking bag—H. N. Cook	4 50
Three rubber bags—H. N. Cook	3 00
Ten sets hurdles—Berkeley Planing Mill	20 00
One manometer—D. A. Sargent	15 00
One chest dynamometer—D. A. Sargent	30 00
Expressage—Patterson & Co.	5 60
One Healthful Exercise for Girls—The W. F. Adams Co.	1 00
One How to Get Strong, and How to Stay So—The W. F. Adams Co.	90
One Strong Bodies for Our Girls and Boys—The W. F. Adams Co.	40
One Manual for Use of Dumb-bells—The W. F. Adams Co.	50
One How to Coach a Team—The W. F. Adams Co.	25
One Deep Breathing—The W. F. Adams Co.	50
One Gymnastic Manual for Ladies—The W. F. Adams Co.	35
One Pronouncing Medical Lexicon—The W. F. Adams Co.	65
One Principles of Squad Instructions—The W. F. Adams Co.	1 30
One Gymnastics—The W. F. Adams Co.	25
One plate swimming—The W. F. Adams Co.	55
One Lawn Tennis—The W. F. Adams Co.	50
One Youth; Its Care and Culture—The W. F. Adams Co.	1 00
One Outdoor Papers—The W. F. Adams Co.	1 30
One Manual for Gymnasium—The W. F. Adams Co.	25
One Classified Gymnasium Exercises—The W. F. Adams Co.	1 00
One Manual of Physical and Vocal Training—The W. F. Adams Co.	75
One Book of Gymnastics—The W. F. Adams Co.	1 00
One Plea for Compulsory Teaching, etc.—The W. F. Adams Co.	45
One Deformities and Debilities—The W. F. Adams Co.	2 20
One Athletics and Football—The W. F. Adams Co.	3 30
One Gymnastic Exercises—The W. F. Adams Co.	30
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Four pounds fish line—McGovern & Cahill	1 40
Worsted for testing color blindness—W. F. Southard	3 10
Clerical service—E. H. Barker	18 00
Expressage—Wells, Fargo & Co.	40
One Training for Strength—Excelsior Publishing House	1 00
Salaries for the year ending June 30, 1891	2,499 96

\$3,935 00

To Museum.

Freight on skeletons from Rochester—Southern Pacific Co.	\$14 70
Expressage, month of July—Patterson & Co.	1 25
Mounting skeletons of two mountain goats—Henry A. Ward	100 00
Mounting skeletons of crowned pigeon—Henry A. Ward	5 00
Five 5-gallon cans—Holbrook, Merrill & Stetson	1 75
Expressage—Patterson & Co.	50
One pound carbolic acid—Justinian Caire	65
Naphthaline—Justinian Caire	1 38
Hydrocyanic acid—Justinian Caire	90
Chloroform—Justinian Caire	75

One thousand No. 1 Klaeger pins—Naturalists' Agency	\$1 00	
Five thousand No. 2 Klaegar pins—Naturalists' Agency	5 00	
One thousand No. 0 Klaegar pins—Naturalists' Agency	1 00	
Two thousand No. 3 Klaegar pins—Naturalists' Agency	2 00	
Postage	17	
	<hr/>	
	\$9 17	
Discount	1 50	
	<hr/>	
		\$7 67
Postage stamps—N. B. Byrne		9 00
One terrapin—Leon & Jonas		1 00
Two black walnut cases—Moller & Sass		220 00
Expressage—Patterson & Co.		50
Expressage—Patterson & Co.		25
Expressage—Patterson & Co.		1 50
Six 1-pint museum jars—Justinian Caire	\$3 00	
Six 1-pint museum jars—Justinian Caire	3 90	
Six 2-pint museum jars—Justinian Caire	4 50	
Six 2-pint museum jars—Justinian Caire	4 50	
Six 3-pint museum jars—Justinian Caire	5 40	
Six 4-pint museum jars—Justinian Caire	6 00	
Six 2-gallon museum jars—Justinian Caire	15 00	
Two 5-gallon museum jars—Justinian Caire	20 00	
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	\$62 30	
Less 25 per cent	15 57	
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		46 73
Four specimen cases—L. & E. Emanuel		240 00
Two platforms—L. & E. Emanuel		18 00
Pot cyanide—Justinian Caire		1 25
Bisulph. carbon gram—Justinian Caire		70
Insect pins—Justinian Caire		2 00
Flat corks—Justinian Caire		2 50
White paint—Justinian Caire		2 50
Paint brush—Justinian Caire		50
Alcohol faucet—Justinian Caire		2 00
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Scissors—Justinian Caire		50
Salaries for the year ending June 30, 1891		1,500 00
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		\$2,186 98

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Freight—Southern Pacific Co.	\$3 70
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Journal American Oriental Society, Vol. 14	4 73
Expressage—Wells, Fargo & Co.	2 05
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Books—B. F. Stevens	114 47
One dozen Dixon's pencils—W. B. Hardy	50
One quart copying ink—W. B. Hardy	1 25
One quart Arabian ink—W. B. Hardy	6 00
One pint rubber stamp ink—W. B. Hardy	1 50
Vol. 88 of American Association for the Advancement of Science	1 32
Index to the Royal Society of Edinburgh—B. F. Stevens	4 28
Freight—Southern Pacific Co.	3 70
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Twenty-nine thousand eight hundred catalogue cards—Library Bureau, Boston	\$59 60
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	47 68
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Subscription to Canadian Entomologist—Kenyon News Co.	5 55
Subscription to foreign periodicals, and postage—B. F. Stevens	17 37
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Fifty gr. naliun		7.00
One kr. naliun sulfurat pro		.60
One kr. naliun zanthogenic		1.10
One kr. kreosotum pur		2.10
Fifty gr. magnesium metallic		2.25
One kr. natrium zanthogenic		1.20
One kr. ol. terebinth rec		1.00
One kr. ol. eusci		1.40
Two kr. plumbum acetic casic		3.50
One kr. plumbum acetic pur		.75
One kr. plumbum chromic pra		4.00
One kr. plumbum chromic pur fus		3.20
One kr. plumbum hyposulfuros alb		1.30
One half kr. plumbum introsun		7.00
One kr. plumbum peroxydat puriss		2.80
Ten kr. plumbum peroxydat puer		9.00
Five kr. plumbum sesquioxysat pur		2.50
Ten kr. plumbum oxydat tut		4.40
Two kr. plumbum oxydat pur		3.00
One kr. plumbum rhodant		2.25
One half kr. plumbum sulfurat pra		1.15
One half kr. sacchar lactis rec		1.25
One half kr. staunum sulfurat		3.15
One half kr. staunum oxydulat pur		3.15
One half kr. staunum oxydat pur		1.50
One kr. staunum arminon muratic		1.70
One kr. stibium oxydat pur		3.00
One half kr. stibium perchloric liquid		1.25
One kr. stibium chlorat crist		4.50
One kr. stibium sulfurat aurant pur		2.80
One kr. stibium sulfurat rubeum		3.00
Two kr. steontium sulfuric natur		.70

Two kr. steontium carbonic natur.....	M.0.80
One kr. tartarus stibiat crist pur.....	3.00
One kr. tartarus chem pur.....	3.75
One half kr. tolual chem pur.....	.70
One kr. titanerz.....	1.75
One quarter kr. uranium acetic.....	11.00
One kr. wasserglas kali pu.....	.75
One kr. wasserglas natron pu.....	.40
Eight kr. wasserstoff superonyd technic.....	5.80
Four kr. wasserstoff superonyd merc.....	4.00
One kr. zincum sulfurat pur.....	6.00
One kr. zincum oxydat pur.....	1.75
Eight kr. zinkstaub.....	4.80
One half kr. zincum metallic pur.....	2.25
One half kr. zincum metallic cocill.....	2.25
One half kr. natrium intros puriss.....	2.50
Two kr. natrium intros technic.....	1.80
One kr. natrium permanganic.....	.55
One kr. natrium oxalic puriss.....	3.00
One hundred gr. cadmium oxydat puriss.....	2.00
One quarter kr. calcium hypophosphoras.....	1.75
One quarter kr. calcium phosphorat.....	1.50
Five kr. carbo animal pulo.....	1.00
Ten kr. carbo animal granul.....	2.80
One half kr. chromium metall pur.....	7.00
Five kr. cuprum sulfuric puriss cw.....	5.00
One kr. cuprum metallic pra.....	4.50
One kr. cuprum aluminat platten.....	1.85
Two kr. ferrum hydricam.....	1.80
One hundred gr. lithium chloratum.....	2.00
Five kr. kali caustic dyr.....	7.50
One half kr. hydrargyrum oxyd rubr.....	4.00
One half kr. jodum resublimat.....	15.00
Five kr. kalium bisulfuric tech.....	4.00
Two kr. kalium bisulfuric pur.....	1.80
Five kr. kalium chloric puriss.....	6.50
Two. kr. kalium cyanat pur.....	6.40
One half kr. kalium jodatium.....	12.50
Five kr. kalium nitric puriss.....	3.75
One kr. kalium perchloric puriss.....	6.50
One kr. kalium permang pur crist.....	1.75
One half kr. kalium phosphoric puriss cr.....	2.85
Two kr. natrium pyrophosph puriss crist.....	3.40
Five kr. natrium phosphoric puriss crist.....	3.00
Ten kr. natrium phosphoric purium crist.....	4.00
Two kr. natronkalk.....	4.00
Two kr. natro kali carbonic puriss.....	7.20
One kr. niccolum chloratum.....	3.20
One hundred gr. niccolum oxydat puriss.....	5.00
One kr. niccolum oxydat ingeteche.....	5.00
Eighty-two hundredths kr. niccolum metallic.....	4.30
One kr. paraffin.....	1.40
One kr. paraffin.....	1.00
One kr. pergament papier india.....	1.60
One fourth kr. natrium jodatium.....	7.50
One half kr. natrium hypophosphoros.....	3.50
One half kr. natrium fluivratum neutral.....	2.25
One half kr. natrium fluivratum sauer.....	2.50
Five kr. natrium chlorat puriss.....	2.25
Two kr. natrium hydric alcohdep.....	5.80
Two kr. natrium hydric alcohdep lac.....	6.00
One half kr. natrium hydric puriss.....	9.00
Seven kr. natrium carbon anhy n. puriss.....	11.20
Fifteen and one half kr. natrium carbon crist puriss.....	4.35
Thirty kr. natrium bisulfuros sice.....	11.40
Five kr. natrium arsenicic.....	3.25
Five kr. natrium arsenico.....	3.50
Two kr. natrium aluminat.....	1.20
One half kr. natrium achtylosulfuric cuit.....	2.25
Five kr. natrium acetic puriss cirty.....	3.25
Ten kr. mangan peroxydat astiff.....	5.00
Ten kr. mangan peroxydat nat pyro.....	6.00
Ten kr. mangan peroxydat pyrolus pu.....	5.50
One half kr. magnos sulfuros praecip.....	1.50
Five kr. mangan peroxydat fimst.....	3.75
One kr. magnos sulfuros tech.....	1.75

One half kr. caducium.....	M.2.50	
One kr. ammon sulfuric pur.....	1.00	
Two kr. ammon oxalic pur.....	4.50	
Two kr. ammon nitric pur.....	4.00	
Cases and packing.....	95.35	
Consul's certificate.....	12.60	
	<u>M.598.10</u>	\$144 55
Freight to Hamburg on seven cases—J. R. McDonald & Co.	M.11.80	
Receiving, cartage, and shipping—J. R. McDonald & Co.	28.45	
Commission—J. R. McDonald & Co.	10.50	
Freight to San Francisco—J. R. McDonald & Co.	102.50	
	<u>M.151.05</u>	36 63
Expressage—Patterson & Co.		19 18
Seven thousand three hundred cubic feet gas—Oakland Gas Co.		18 25
Bill of E. de Haën, in marks; total in dollars and cents:		
One cask ammon chlorat.....	M.37.10	
One cask ammon carbonic.....	35.00	
One cask ferrum sulfurat.....	26.40	
Twenty kr. sulfer sublim.....	5.20	
Twenty kr. sulfer ruffiat.....	3.80	
Five kr. slamum metall. ground.....	17.50	
Ten kr. kali chloric pur cey.....	13.00	
Twenty-five kr. mang. peroxyd.....	15.00	
Ten kr. mang. peroxyd.....	5.50	
One hundred cys. zinc metall. ground.....	.25	
Twenty kr. cale chlorat siec cand.....	6.00	
Five kr. kali firmany ciro.....	8.75	
Twenty kr. nitr caust pur ibac.....	24.00	
Ten kr. nitr caust pur alcohol def.....	30.00	
Twenty kr. kali caust pur ibac.....	30.00	
Five kr. kali caust pur alcah def.....	15.00	
Ten kr. ammon aitrisc cristpere.....	11.50	
Ten kr. arsenic metallic.....	10.00	
Ten kr. acid arsenicos.....	3.40	
Twenty kr. calcium fleo.....	2.20	
Five kr. kalmice bromat.....	16.50	
Two kr. kalmice jodative.....	50.00	
Five kr. antimon metall.....	7.50	
Five kr. tartar stibiat cryst.....	12.50	
One half kr. magnes metall hand.....	24.00	
Twenty kr. magnes sulfuric pur.....	3.00	
Five kr. buymn chlorat pur.....	2.50	
One kr. yoduce resublim.....	30.00	
One case acid acetic, pure.....	48.00	
Ten kr. natr bicarb puriss.....	6.00	
Twenty kr. natr carbon anty.....	3.60	
Twenty kr. natr bochromac tasto.....	17.20	
One kr. bismuth metallic anf.....	20.00	
One kr. bismuth carbonic anf.....	18.75	
One kr. subatric pur.....	16.00	
Twelve and one half kr. capr sulfur techn.....	7.50	
One kr. lacmus No. 1.....	3.20	
Twenty kr. plumb oxydat technic.....	9.20	
Two kr. plumb oxydat mass.....	1.20	
One kr. plumb oxydat memm.....	.80	
Five kr. plumb peroxydat fur.....	14.00	
Three kr. hydr oxydat rubr pp.....	24.00	
Five kr. plumb carbonic pur.....	12.50	
Five kr. stibium chlorat cryst.....	22.50	
Ten kr. staunum chlorat crsyt.....	15.00	
Five kr. hydr bichloral coross subl.....	30.00	
Three kr. cupe carbonic pur.....	6.90	
Five plumb cistic.....	5.00	
One kr. cadmium carbonic puriss.....	14.00	
One kr. caboltucee carbonic.....	18.00	
One kr. nieedum carbonic.....	4.25	
Two kr. nieedum chloratum.....	6.40	
Five kr. nieedum sulfuric ammon.....	7.00	
Ten kr. ferr sesquichlorat crist.....	5.60	
Ten kr. natr acetic pur.....	6.50	
One half kr. chromine metallic.....	7.00	
Fifty gr. selemim.....	9.00	
One kr. cadmium.....	5.50	

Five kr. phosphar mang.....	M. 21.00
Five kr. phosphar amorph.....	30.00
One kr. natrium metallic.....	13.00
One half kr. calcium metallic.....	57.50
Casing.....	94.60
Consul's certificate.....	12.60

	M. 1,042.50	\$250 00
One carboy nitric acid—Garden City Chemical Works.....		10 43
One carboy muriatic acid—Garden City Chemical Works.....		5 04
Two carboys muriatic acid—Garden City Chemical Works.....		12 80
Insurance—Canton Insurance Co.....		41 31
Five tins caustic soda.....		5 00
One copper distilling apparatus—Elmer & Amend.....		25 00
Three hundred and twenty-two pounds aqua ammonia—San Francisco Gas Co.....		25 75
Expressage—Patterson & Co.....		5 50
Seven thousand nine hundred cubic feet gas—Oakland Gas Co.....		19 75
Customs fees seven cases chemicals—G. W. Reed.....		4 00
State toll on goods from Hamburg—William Wolff & Co.....		10
Freight—Southern Pacific Co.....		3 70
Expressage—Patterson & Co.....		5 00
Two hundred gallons Extra Star oil—Whittier, Fuller & Co.....		52 00
Bill of Franz Schilling, in marks; total in dollars and cents:	Marks.	
Sixty-six stg. retorten, 500 gr.....	25.08	
Fifty stg. T retoren diverse.....	7.50	
Thirty-four stg. retorten, 500 gr.....	12.92	
Fifty-eight stg. retorten, 250 gr.....	17.40	
Forty-two stg. retorten, 250 gr.....	12.60	
One hundred and five stg. retorten, 60 gr.....	18.90	
Forty stg. retorten, 100 gr.....	8.00	
One hundred and five stg. rochflaschen, 1,000 gr.....	26.25	
One hundred and ten stg. rochflaschen, 60 gr.....	6.05	
Twelve stg. fraklonspollen, 15 gr.....	1.44	
Ten stg. fraklonspollen, 30 gr.....	1.40	
Eleven stg. fraklonspollen, 60 gr.....	1.76	
Ten stg. fraklonspollen, 100 gr.....	2.00	
Eleven stg. fraklonspollen, 250 gr.....	3.85	
Ten stg. fraklonspollen, 500 gr.....	5.20	
Ten stg. fraklonspollen, 750 gr.....	6.50	
Twelve stg. fraklonspollen, 1,000 gr.....	9.00	
One thousand stg. reagirglaser.....	20.00	
One hundred stg. reagirglaser.....	3.00	
Two hundred stg. reagirglaser.....	4.40	
One thousand stg. reagirglaser.....	18.00	
Fifty stg. reagirglaser.....	1.75	
Fifty stg. praparetengislser.....	.60	
Fifty stg. praparetengislser.....	.75	
Fifty stg. praparetengislser.....	1.00	
Fifty stg. praparetengislser.....	1.40	
Sixteen stg. frichter, 25 cm.....	15.20	
Fifteen stg. frichter, 21 cm.....	6.75	
Ten stg. frichter, 5 cm.....	7.00	
One hundred stg. kochplerchen, 500 gr.....	18.00	
One hundred and ten stg. kochplerchen, 100 gr.....	6.60	
One hundred and ten stg. kochplerchen, 30 gr.....	5.50	
Seventy-five stg. kugchihren schmerchn.....	15.00	
One hundred stg. kochflaschen, 250 gr.....	10.00	
Six stg. sicherheitsrohren.....	3.00	
Twelve stg. sicherheitsrohren.....	3.00	
Twelve stg. sicherheitsrohren.....	3.00	
Twenty-six stg. sicherheitsrohren.....	4.68	
Twenty-six stg. sicherheitsrohren.....	3.90	
Six stg. sicherheitsrohren.....	2.10	
Four stg. spritzflaschen, 500 gr.....	4.00	
One stg. spritzflaschen, 1,000 gr.....	1.75	
Fifty stg. kugelrohren m. 2 kugeln.....	15.00	
Twenty-five stg. kugelrohren m. 1 kugeln.....	5.00	
Five stg. trichter, No. 246.....	2.25	
Twenty-six stg. trichter, No. 624.....	6.50	
Two hundred and fifteen stg. trichter, No. 624.....	21.50	
Two stg. cylinder m. Kropf.....	.64	
One stg. cylinder m. Kropf.....	.40	
One stg. cylinder m. Kropf.....	.52	
One stg. cylinder m. Kropf.....	.62	
Fifty stg. trichter, No. 624.....	3.00	
Twenty-two stg. trichter, No. 624.....	7.92	

Fifty-five stg. trichter, No. 624	M.11.00
One hundred and five stg. trichter, No. 624	8.40
Fifteen stg. retorten m. sdf, 2,000 gr., No. 629	12.00
Ten stg. retorten, m. sdf, 1,000 gr., No. 629	5.60
Two hundred stg. trichter, No. 624	27.00
Six stg. trichter, No. 664	6.00
One stg. reagierglasergestell kirschl	1.00
One stg. reagierglasergestell kirschl	1.20
One stg. reagierglasergestell mahagoniholz	1.60
One stg. reagierglasergestell mahagoniholz	2.00
One hundred and eight stg. kochflaschen, 200 gr.	9.72
Thirty stg. retorten, 100 gr.	16.50
One hundred stg. Hoffmeister's schalschen	5.00
One hundred stg. glastheinen	1.80
Forty stg. kochflaschen, 200 gr.	19.20
Twenty stg. retorten, 100 gr.	4.00
Ten stg. Woulsche flaschen, 150 gr.	4.25
Twenty-five stg. Woulsche flaschen, 200 gr.	11.25
Twenty-five stg. Woulsche flaschen, 250 gr.	12.50
Ten stg. Woulsche flaschen, 500 gr.	7.00
Six stg. Woulsche flaschen, 1,000 gr.	5.40
Two stg. Woulsche flaschen, 1,500 gr.	2.60
Two stg. Woulsche flaschen, 2,000 gr.	3.00
Two stg. Woulsche flaschen, 150 gr.	.80
Two stg. Woulsche flaschen, 200 gr.	.80
Two stg. Woulsche flaschen, 250 gr.	.90
Two stg. Woulsche flaschen, 500 gr.	1.20
Three stg. Woulsche flaschen	2.40
Two stg. Woulsche flaschen	2.40
Two stg. Woulsche flaschen	3.00
Eight stg. adklarflaschen, 2,000 gr.	8.80
Three stg. cylinder m. Rand	1.80
Two stg. cylinder m. Rand	.40
Two stg. cylinder m. Rand	.96
Forty-six stg. rollflaschen mit	30.36
Thirty-two stg. retorten, No. 629	17.60
Twelve stg. messkolben ohne, 200 cc.	4.20
Twenty-two stg. messkolben ohne, 25 cc.	3.30
Twenty-two stg. messkolben ohne, 20 cc.	3.30
Twenty stg. messkolben ohne, 10 cc.	2.00
Twelve stg. messkolben ohne, 5 cc.	1.20
Four stg. messkolben ohne	1.20
Sixty-two stg. rollflaschen in gen, 1,000 gr.	23.56
Twenty-five stg. kochflaschen, 3,000 gr.	18.75
Twenty-four stg. apparate, No. 359	24.00
Fifty stg. filtrirflaschen, 750 gr.	35.00
Twelve stg. filtrirflaschen, 1,000 gr.	9.00
Nine stg. filtrirflaschen, 2,000 gr.	9.90
One stg. mischcylinder, 500 cc.	2.00
One stg. mischcylinder, 1,000 cc.	3.20
One stg. mischcylinder, 2,000 cc.	5.30
Ten stg. kochflaschen, 2,000 gr.	4.80
Two stg. kochflaschen, 4,000 gr.	1.68
Twenty-five stg. trichter, 5 cm.	1.75
Thirty-five stg. trichter, 7 cm.	2.80
Fifty-six stg. trichter, 8 cm.	5.60
Thirty-five stg. trichter, 10 cm.	4.72
Twenty stg. trichter, 13 cm.	4.00
Thirty salz. becherglaser, No. 1-5	22.50
Twenty-four stg. kochflaschen, 4,000 gr.	20.16
Ten stg. wageglaschen, No. 722, 10 gr.	2.80
Twenty-two stg. wageglaschen, No. 722, 20 gr.	6.60
Twelve stg. wageglaschen, No. 722, 30 gr.	4.20
Six stg. wageglaschen, No. 722, 50 gr.	2.40
Seven stg. wageglaschen, No. 720	2.80
Five stg. messkolben mit stopsel, 100 cc.	1.50
Six stg. messkolben mit stopsel, 125 cc.	2.40
Three stg. messkolben mit stopsel, 250 cc.	2.10
Five stg. messkolben ohne, 250 cc.	2.25
Three stg. messkolben ohne	1.20
Ten stg. retorten, 100 gr.	2.00
Fifty-two ko. massive stabe	52.00
Thirty-one stg. rollflaschen in gen stpe, 500 gr.	8.37
Two stg. rollflaschen in gen stpe, 1,000 gr.	.76
Six stg. filtrirflaschen stark glase, 1,500 gr.	4.80
Fifty-six stg. filtrirflaschen, 750 gr.	28.00

Twelve stg. filtrirflaschen, 500 gr.	M. 4.80
Fifty-one stg. filtrirflaschen stark in glase, 1,000 gr.	30.00
One stg. scheidertrichter, 2 str.	3.00
One stg. scheidertrichter, 3 str.	4.00
Two stg. apparate kipp gross	11.00
One stg. cylinder, 1,000 cc.	2.70
One stg. cylinder, 2,000 cc.	4.50
One stg. cylinder, 10 cc.	.45
Eighteen stg. vollpipetten, 1 cc.	1.80
Fifteen stg. vollpipetten, 2 cc.	1.80
Six stg. vollpipetten, 3 cc.	.84
Six stg. vollpipetten, 4 cc.	.90
Six stg. vollpipetten, 5 cc.	.90
Twelve stg. vollpipetten, 10 cc.	2.16
Six stg. vollpipetten, 15 cc.	1.20
Five stg. vollpipetten, 20 cc.	1.25
Twelve stg. vollpipetten, 25 cc.	3.60
Six stg. vollpipetten, 30 cc.	2.10
Six stg. vollpipetten, 40 cc.	2.40
Six stg. vollpipetten, 50 cc.	2.40
Three stg. vollpipetten, 75 cc.	1.27
Three stg. vollpipetten, 100 cc.	1.50
Three stg. vollpipetten, 150 cc.	1.71
Three stg. vollpipetten, 200 cc.	2.25
Two stg. gasmaschfluschen, 500 gr.	2.50
Three stg. gasmaschfluschen, 250 gr.	3.30
Three stg. gasmaschfluschen, 300 gr.	3.30
One stg. apparate incl pappkiote, No. 365	2.15
One stg. apparate incl pappkiote, No. 368	1.10
One stg. Universal araometer	2.00
One stg. araometer	.55
One stg. araometer	.65
Three stg. futterale	.30
One stg. graunnflasche m. thermon, 50 gr.	2.50
Ten stg. burettenschrimmer	4.75
One stg. scheidertrichter cylinderf.	1.25
One stg. scheidertrichter kugelf.	1.25
One stg. burette ohne Hahn, 25 cc.	.70
Three stg. burette ohne Hahn, 50 $\frac{1}{2}$ cc.	3.90
Two stg. burette ohne Hahn, 70 $\frac{1}{2}$ cc.	4.40
One satz burette ohne mit fuss	5.00
One satz burette ohne mit fuss	7.00
Six s. messkolben, 50 ccm.	1.20
Four s. messkolben, 500 ccm.	2.40
Five s. messkolben, 1,000 ccm.	4.00
Six s. messkolben, 1,000 ccm. mit stg.	6.60
Fifty s. sthrglaser, 2 cm.	3.50
Fifty s. sthrglaser, 3 cm.	4.00
One hundred s. sthrglaser, 4 cm.	10.00
One hundred and five s. sthrglaser, 5 cm.	12.60
One hundred s. sthrglaser, 7 cm.	15.00
Fifty s. sthrglaser, 9 cm.	10.00
Twenty-five s. sthrglaser, 12 cm.	7.50
Ten s. sthrglaser, 15 cm.	5.00
Six s. sthrglaser, 18 cm.	4.20
Four s. sthrglaser, 20 cm.	3.20
Three s. sthrglaser, 25 cm.	5.85
One satz Hoffmann'sche apparate	15.00
One str. Hoffmann'sche apparate	7.50
One str. fudiometer	3.00
One str. burette, 50 $\frac{1}{2}$ cc.	2.00
One satz Hoffmann'sche apparate	20.00
One stp. Hoffmann'sche apparate	9.00
One stp. Hoffmann'sche apparate	8.50
Twenty-five satze becherglaser, Nos. 1-8	37.50
Fifty ko. schrver schmelzbare rohren	140.00
Twenty satze becherglaser, Nos. 1-12	60.00
Eleven satze becherglaser, Nos. 1-8	16.50
Six satze becherglaser, Nos. 1-16	28.50
Thirty-one satze becherglaser, Nos. 1-10	62.00
Four satze becherglaser, Nos. 1-16	19.00
Nineteen satz becherglaser, Nos. 1-10	38.00
Thirty satze becherglaser, Nos. 1-8	45.00
Thirty sts. retorten mit stpe, 1,000 gr.	16.50
Thirteen sts. retorten mit stpe, 2,000 gr.	10.40
Thirty-five sts. retorten mit stpe, 200 gr.	9.45

Thirty-six satze becherglaser, Nos. 1-3	M. 54.00
Seventy satze becherglaser, Nos. 1-5	52.50
One hundred and seventy satze becherglaser, Nos. 1-3	64.60
Nine stg. acklarflaschen, 1,000 gr.	6.75
Eleven stg. exkatoren	19.80
Eighteen stg. vorstosse die form, 20 cm. lg.	7.20
Fourteen stg. vorstosse die form, 30 cm. lg.	7.00
Fourteen stg. vorstosse die form, 40 cm. lg.	8.40
Eight stg. rollflaschen m. dekelote, 500 gr.	2.80
Thirty-five satze becherglaser, Nos. 1-3	13.80
Seventy stg. retorten, 200 gr.	18.90
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	3.60
One stg. gaspipette n. himpelary stativ	3.60
One stg. gaspipette n. himpelary stativ	7.75
One stg. gaspipette n. himpelary stativ	6.75
One stg. gaspipette n. himpelary stativ	2.85
One stg. gaspipette n. himpelary stativ	4.60
One stg. gaspipette n. himpelary stativ	5.75
One stg. gaspipette n. himpelary stativ	2.75
One stg. gaspipette n. himpelary stativ	3.00
Thirty-two stf. retorten n. stfl, 100 gr.	6.40
Betrag der verpackungskosten, etc.	372.70
Beglaucigungskosten	12.10

Bruttocetrag der factura..... M. 2,447.55 \$593[53

Bill of Warmbrunn, Quilitz & Co., in marks; total in dollars and cents:	
Two thousand sheets white German filtering paper	M. 103.75
Eighteen thousand sheets round filters	173.20
Three thousand sheets round filters	6.70
Four hundred sheets round filters	5.85
Five hundred sheets white filtering paper	7.60
Eleven thousand sheets white round filters	72.50
Three thousand sheets white round filters	26.60
Ten thousand five hundred sheets white round filters	30.25
One thousand five hundred sheets yellow round filters	6.00
Two hundred cracking wals, thin	10.00
Fifty cracking wals, strong	4.00
Five sets corkcovers, of cress	13.75
Two sets corkcovers, of cress	13.20
One set corkcovers, of steel	11.00
Two sets corkcovers, japanned tin plate	5.50
One Bunsen's universal support, complete	23.80
Universal support, on iron tripod	97.60
Universal support, on square form	38.85
Evaporating dishes, porcelain	47.50
Evaporating dishes, porcelain	16.75
Evaporating dishes, porcelain, common	12.45
Evaporating dishes, porcelain, glassform	31.75
Porcelain drying vessels	14.40

Discount..... M. 792.20 28.70

Freight and packing	M. 763.50 25.80
Consular certificate	10.70

..... M. 800.00 194 00

Bill of E. Merck, in marks; total in dollars and cents:	
Five kilograms acid nitric, fuming	M. 8.00
Forty kilograms acid hydrochloric, pure	20.00
Ten kilograms acidum hydrochloric, pure	5.00
Ten kilograms acidum hydrochloric, pure	10.00
One kilogram acid hydrosilico fluoric	16.00
Ten kilograms acid sulphuric	10.00
Five kilograms acid sulphuric, fuming	7.00
Five kilograms alcohol, absolute pure	12.00
One kilogram ethce, c.p.	2.00
One thousand and ninety-four kilograms sulphuric acid	19.69
Five kilograms acid acetic, c.p. conc.	10.00
Ten grams acid carminic	3.00
Five hundred grams acid chromic	4.00
Five hundred grams acid molybdic	4.00

One hundred grams acid molybdic, free	M.1.60
One hundred grams acid pyrogassic	3.00
Two kilograms acid tartaric	9.00
Ten kilograms ammonia carbonate	16.00
Five kilograms ammonia chloride	6.00
One half kilogram ammonia fluoric	9.00
One hundred grams ammonia molybdate	1.20
One half kilogram ammonia nitrate	1.40
One half kilogram ammonia oxatate	3.25
One kilogram ammonia sulphate	2.00
One half kilogram barium acetate	2.50
Two kilograms barium carbonate	16.00
Two kilograms barium chloride	10.00
One half kilogram barium hydrate	1.00
One half kilogram barium nitrate	1.00
One half kilogram calcium oriac	27.00
One half kilogram calcium sulphate	2.75
One half kilogram copper mebasic	8.00
One hundred grams hydroxylamine hydrochlor	8.00
One half kilogram fron sesquichloride	1.80
One half kilogram fron sulphate oxydul	.80
Five kilograms fron sulphiac sticks	4.00
One kilogram fron ammonia	4.50
One kilogram lead acetate	1.40
Two kilograms lead chromate	16.00
One kilogram lead oxide	4.00
One kilogram hagwesium chloride	3.00
One half kilogram hagwesium oxyac, free	12.00
One kilogram hagwesium sulphate	1.60
One half kilogram mercury bichloride	4.50
One half kilogram mercury nitrate	4.00
One half kilogram mercury oxide	11.00
One kilogram copper sulphate	1.40
Two sheets litmus paper, red	.20
Two sheets litmus paper, yellow	.20
Ten grams platinum chloride	14.00
Two kilograms potassium bichromate	4.80
One kilogram potassium bisulphate	2.40
One half kilogram potassium bromate	11.00
Two kilograms potassium carbonate	4.40
One kilogram potassium chlorate	2.00
One half kilogram potassium chromate	1.80
One kilogram potassium cyanide	21.00
One half kilogram potassium ferri cyanide	4.00
One half kilogram potassium ferro cyanide	1.80
Five kilograms potassium hydroxide	50.00
Two kilograms potassium hydroxide, sticks	8.00
One half kilogram potassium iodiac	13.00
Two kilograms potassium nitrate	3.00
One half kilogram potassium nitrite	3.50
One half kilogram potassium permanganate	6.00
One half kilogram potassium sulphate	.80
One quarter kilogram potassium rhodanate	1.38
Twenty grams silver metallic	6.00
Fifty grams silver nitrate	7.00
One kilogram sodium acetate	1.50
One kilogram sodium bicorate	2.50
One kilogram sodium bicarbonate	1.25
One half kilogram sodium bisulphate	1.00
One half kilogram sodium bisulphite	6.00
Five kilograms sodium carbonate crist	6.00
One kilogram sodium carbonate crist, dry	2.50
One kilogram sodium chloride	6.00
Two kilograms sodium nitrate	2.50
One half kilogram sodium hydroxide	10.00
Two kilograms sodium hydroxide, pure	3.80
One half kilogram sodium nitrate	2.00
Two kilograms sodium bhyosulphate	2.00
One half kilogram sodium nosframate	1.88
Two kilograms sodium and ammonia	9.00
One half kilogram tin chloride	1.50
One fourth kilogram uranium nitrate	12.50
One kilogram zinc metallic, c. p. sticks	6.00
One kilogram zinc metallic	2.50
One collection of alkaloids, 52 specimens	80.00
One collection of glucosides, 72 specimens	100.00

One collection physiological preparation.....	M. 75.00
Ten grains lacmoid, c. p. y. scales.....	1.25
Five hundred grams lacmus com't.....	.65
Two hundred grams phenolylbaleinc.....	16.00
One hundred grams methyllorange.....	1.60
One hundred grams tropacilin.....	2.50
Fifty sheets Gilmn's paper, red.....	2.00
Fifty sheets Gilmn's paper, blue.....	2.00
One hundred sheets furmeric paper.....	4.00
Fifty sheets congo paper.....	2.00
Thirty grams sulphanic acid.....	1.20
Twenty grams naphthylamine.....	.60
Two hundred grams diphenylamine.....	4.00
Two kilograms parchment paper.....	4.40
Packing and shipping charges.....	34.80
One hundred and four colored bottles.....	53.45
One jar.....	1.90
Consular fees.....	10.70

M. 974.15

\$236 23

102 58

Freight and charges—J. R. McDonald & Co.

Bill of Robert Muencke, in marks; total in dollars and cents:	Marks.
One thousand runde filter 595, 5½ cm.....	2.50
Two thousand runde filter 595, 7 cm.....	5.30
Five thousand runde filter 595, 9 cm.....	19.75
Ten thousand runde filter 595, 11 cm.....	45.00
Ten thousand runde filter 595, 12½ cm.....	50.00
Five thousand runde filter 595, 15 cm.....	35.50
One thousand runde filter 595, 18½ cm.....	8.70
One thousand runde filter 595, 24 cm.....	15.75
One thousand runde filter 595, 27 cm.....	22.00
Five hundred runde filter 595, 32 cm.....	13.40
Five hundred runde filter 595, 38½ cm.....	15.75
One thousand runde filter 597, 5½ cm.....	3.80
Two thousand runde filter 597, 7 cm.....	8.00
Five thousand runde filter 597, 9 cm.....	29.00
Ten thousand runde filter 597, 11 cm.....	71.00
Ten thousand runde filter 597, 12½ cm.....	74.00
Five thousand runde filter 597, 15 cm.....	47.50
One thousand runde filter 597, 18 cm.....	12.60
One thousand runde filter 597, 24 cm.....	18.90
One thousand runde filter 597, 27 cm.....	25.00
Five hundred runde filter 597, 32 cm.....	15.25
Five hundred runde filter 597, 38½ cm.....	20.00
Five hundred runde filter 597, 50 cm.....	33.00
One thousand runde filter 589, 5½ cm.....	15.00
One thousand runde filter 589, 7 cm.....	16.00
Five hundred runde filter 589, 11 cm.....	24.00
Two hundred runde filter 589, 12½ cm.....	14.50
One thousand runde filter 589, 9 cm.....	6.40
One hundred runde filter 589, 15 cm.....	3.80
One thousand runde filter 590, 5½ cm.....	18.00
One thousand runde filter 590, 7 cm.....	20.00
One thousand runde filter 590, 9 cm.....	30.00
Five hundred runde filter 590, 11 cm.....	18.00
Two hundred runde filter 590, 12½ cm.....	8.00
One hundred runde filter 590, 15 cm.....	4.80
One thousand falsenfilser 588, 12½ cm.....	13.50
One thousand falsenfilser 588, 18½ cm.....	18.00
Five hundred falsenfilser 588, 24 cm.....	14.30
Five hundred falsenfilser 588, 32 cm.....	20.80
Three hundred falsenfilser 588, 38½ cm.....	15.90
Two hundred falsenfilser 584, 24 cm.....	8.00
Two hundred falsenfilser, 28 cm.....	12.00
Two hundred falsenfilser, 32 cm.....	15.60
One hundred falsenfilser, 38½ cm.....	10.80
One hundred falsenfilser, 50 cm.....	12.00
Three hundred felsvinpapier, 598.....	54.00
Five hundred felsvinpapier, 591.....	75.00
One thousand felsvinpapier, 58-58, I.....	67.50
Two rollen felsvinpapier, 566.....	25.00
Two thousand bog. felsvinpapier, 58-58, II.....	84.00
One chlorenswicklungs app., 1 lsr.....	3.75
Two joichser, m. kgl., 10 cm.....	1.00
Two joichser, 12 cm.....	1.20
Two joichser, 14 cm.....	2.00

Two joichser, 16 cm.	M.2.40
Two joichser, 18 cm.	3.20
Twenty-two joichser gerrips, 11 sorsen	8.40
One messflachen, 100	.90
One messflachen, 250	1.30
One messflachen, 500	1.80
One messflachen, 1,000	2.30
One exsiccator ohne Hahn	3.75
One exsiccator mit Hahn	6.00
One exsiccator mit Hahn	8.50
Two filtrirkolben, 100 cc.	.60
Two filtrirkolben, 250 cc.	.80
Two filtrirkolben, 500 cc.	1.00
Two filtrirkolben, 750 cc.	1.10
Two filtrirkolben, 1,000 cc.	1.20
Two filtrirkolben, 2,000 cc.	2.60
Two filtrirkolben, 200 cc.	1.40
Two filtrirkolben, 250 cc.	1.60
Two filtrirkolben, 500 cc.	1.80
Two filtrirkolben, 750 cc.	1.90
Two filtrirkolben, 1,000 cc.	2.00
One vorlage m. 2 tub, 1 lsr.	2.00
One vorlage m. 2 tub, 2 lsr.	2.50
One vorlage m. 2 tub, 3 lsr.	3.50
One vorlage m. 2 tub, 5 lsr.	4.50
One vorlage m. 2 tub, $\frac{1}{2}$ lsr.	1.25
One vorlage m. 2 tub, $\frac{1}{3}$ lsr.	1.50
One vorlage m. 2 tub, $\frac{1}{4}$ lsr.	2.00
One vorlage m. 2 tub, 2 lsr.	2.50
One vorlage m. 2 tub, 4 lsr.	3.80
One vorlage m. 2 tub, $\frac{1}{2}$ lsr.	1.50
One vorlage m. 2 tub, $\frac{1}{3}$ lsr.	2.00
One vorlage m. 2 tub, $\frac{1}{4}$ lsr.	2.50
One vorlage m. 2 tub, 2 lsr.	3.60
One vorlage m. 2 tub, 4 lsr.	4.50
Ten sasf. becherglaser, 1-5 yolg.	10.00
Five sasf. becherglaser, 1-8 yolg.	9.00
One sasf. becherglaser, 1-10 yolg.	3.00
One sasf. becherglaser, 1-12 yolg.	4.00
One sasf. becherglaser, 1-16 yolg.	7.00
Five sasf. becherglaser kaliglas, 1-8	14.00
Two sasf. becherglaser kaliglas, 1-10	10.00
One sasf. becherglaser kaliglas, 1-12	6.10
Five sasf. becherglaser hohe form, 1-8	20.25
One chlorentwicklungs apparas thon, 2 lsr.	3.50
One chlorentwicklungs apparas thon, 4 lsr.	5.50
One glaskassen, 130-105 mm.	1.10
One glaskassen, 235-185 mm.	2.50
One glaskassen, 210-155 mm.	2.00
One glaskassen, 315-235 mm.	4.95
One glaskassen, 365-315 mm.	7.70
One glaskassen, 420-315 mm.	11.00
One glaskassen, 50-25-25 cr.	.60
One glaskassen, 200-120-120	3.50
One glaskassen, 300-200-150	10.50
One absorptionsgefass, 15 cm.	.75
One absorptionsgefass, 20 cm.	1.00
One absorptionsgefass, 30 cm.	2.00
One araometer	8.50
One satz normal araometer	50.00
One satz araometer	15.00
One half kg. asbess	3.00
Four burssen	1.00
One burssen	.75
One burssen	1.00
Four hundred glasperlen	2.00
One dialysator	3.50
One gasentwicklungsapp	10.50
One salz gervichse	13.75
One stocke mis glashahn	7.50
Two gluhschilfchen, 0	.70
Two gluhschilfchen, 1	.50
Two gluhschilfchen, 2	.50
Two gluhschilfchen, 3	.50
Two gluhschilfchen, 4	.50
One pracionshahn	10.00

Five queschhahne A, 4 cm.	M.1.10
Five queschhahne A, 5 cm.	1.25
Five queschhahne A, 6 cm.	1.50
Five queschhahne A, 7-5 cm.	1.75
One queschhahne B, 4 cm.	.35
Two queschhahne B, 5 cm.	.76
One queschhahne B, 6 cm.	.40
One queschhahne B, 7 1/2 cm.	.45
Five queschhahne C, 7-5	1.25
Two queschhahne, D	.90
Two queschhahne, E	.90
Two queschhahne, F	1.30
Two queschhahne, G	.90
Two queschhahne, H	.40
Two queschhahne, F	.80
One queschhahne K, 28 mm.	.80
One queschhahne K, 30 mm.	.95
One queschhahne K, 35 mm.	1.10
Two queschhahne L	1.50
One queschhahne F, 40 mm.	.90
One queschhahne F, 45 mm.	1.00
One queschhahne K, 40 mm.	1.20
One queschhahne muencke	1.25
Ten halser	3.00
One halser	1.00
Two rundkolben	8.00
One sasy korkcohrer, 1-12	6.00
One korkprusse	2.00
Five flache drahlnessy kuppen	1.50
Three flache drahlnessy kuppen	1.50
One flache drahlnessy kuppen	1.00
One loffel eisen m. spuselssiel, 12.5 cm.	.60
One loffel m. spuselssiel, 20 cm.	.95
One lupe m. 3 linsen	3.00
One lupe, 33 mm.	4.00
One lupe, 2 linsen	4.50
Ten buessen qeims	2.50
One ripessenbrager	4.50
One hundred gr. magnesium pulverform	15.00
Five karkmesser	5.00
Five glasmesser	5.00
One scalpell klein	1.10
One scalpell missel	1.25
One scalpell grass	1.40
One scalpell sweischneidg	1.50
One mesallsamlung	44.00
One achasmorser	24.00
One glasmorser, 10 cm.	1.00
One glasmorser, 16.5 cm.	1.85
One morser n. pory, No. 1	.50
One morser n. pory, No. 3	.90
One morser n. pory, No. 5	1.20
One morser n. pory, No. 7	1.75
One morser n. pory, No. 11	2.95
One morser glasiol, No. 00	.55
One morser glasiol, No. 0	.80
One morser glasiol, No. 1	.75
One morser glasiol, No. 3	1.20
One morser glasiol, No. 5	1.65
One pinesse n. nickel	2.25
One dobereiner fund maschine	6.00
One pory plasse	.35
One pory plasse, 8.5 cm.	.35
One pory plasse, 10 cm.	.85
Two pory plasse, 14 cm.	1.00
One pory plasse, 20.8-14.5	3.00
One plasse	2.00
Two buch reagentien	2.00
Two sammelgefasse	6.00
Five zangen n. mess vern	12.50
Two zangen n. neusilber	4.50
One zangen n. nickel	4.00
Ten kgl. pory tiegel ohne deckel, No. 000	1.20
Twenty kgl. pory tiegel ohne deckel, No. 00	5.00
Twenty kgl. pory tiegel ohne deckel, No. 0	7.00
Twenty kgl. pory tiegel ohne deckel, No. 1	8.00

Ten kgl. pory tiegel ohne deckel, No. 2	M.6.00
Three kgl. pory tiegel ohne deckel, No. 3	2.40
Two kgl. pory tiegel ohne deckel, No. 4	1.70
One kgl. pory tiegel ohne deckel, No. 5	1.05
Five shmelysiegel, No. 3	1.75
Five shmelysiegel, No. 4	2.00
Five shmelysiegel, No. 5	2.50
One shmelysiegel biscinlgsony	.30
One shmelysiegel biscinlgsony	.35
One shmelysiegel biscinlgsony	.45
One shmelysiegel biscinlgsony	.55
One shmelysiegel biscinlgsony	.75
One shmelysiegel biscinlgsony	.80
One untersalzschaale glass, No. 2	.30
Two untersalzschaale glass, No. 1	.48
Two untersalzschaale glass, No. 0	.36
One untersalzschaale glass, No. 2	.45
Two untersalzschaale glass, No. 1	.70
Two untersalzschaale glass, No. 0	.60
Three satz pory kinge glasiol	7.50
Four hundred gr. wrot rose metall	7.20
One coml fange	2.25
Five kg. zink arsenfric	8.75
One half kg. zink chem rein pulver	5.00
One half kg. zink chem rein ssaben	4.25
One kg. zink chem rein	8.50
One half kg. zink abs chem rein	11.00
Ten kg. yesslifse abs	8.00
Three feilen, 6 cm.	1.50
Three feilen, 8 cm.	2.25
Two feilen, 10 cm.	1.80
Two feilen, 16 cm.	2.40
Three feilen, 6 cm.	.90
Two feilen, 10 cm.	.80
Four feilen, 16 cm.	2.40
One feilen, 20 cm.	1.00
Two feilen, 8 cm.	.80
Two feilen, 10 cm.	1.00
One feilen, 12 cm.	.50
Four feilen, 12 cm.	2.00
One feilen, 16 cm.	.70
Ninety glasplassen, 100 mm. in 6 furbins	31.50
Three glasplassen, 200 mm. rosh	3.60
Two glasplassen, 200 mm. orange	2.40
One glasplassen, 200 mm. gelc	1.20
Two kohren kalumm nasimum	.35
Four absorptions rohren, 10 cm.	6.00
Three absorptions rohren, 15 cm.	7.50
Two absorptions rohren, 20 cm.	6.00
One absorptions rohren, mit furt	5.00
One absorptions rohren m. hahnssopen	4.50
One absorptionsgefais	3.50
One absorptionsgefais	3.00
One kl. absorptions schlange	1.25
One destellations rohr	4.00
One destellations rohr	5.00
One extractions apparat, 250 cc.	3.20
One extractions apparat, 1,000 cc.	5.00
One filtrirsohm, A	.40
One filtrirsohm, B	.40
One gaswaschflasch	1.50
One dreirveyhahn	2.75
One heber, 50 cm.	1.50
Three kohelensaure apparuse	6.00
One kohelensaure apparuse	4.00
One kohelensaure apparuse	2.00
One kohelensaure apparuse	5.00
Two kohelensaure apparuse	2.50
One kohelensaure apparuse	6.00
One kohelensaure apparuse	6.00
Five kolben cirnformig	1.75
Three kolben cirnformig	1.20
Two kolben cirnformig	1.00
Two kolben cirnformig	1.40
Two appacase	2.90
One pyknometer	2.50

Two pyknometers	M.3.00
One pyknometer	1.75
One reagenskelch .....	.25
One reagenskelch .....	.30
One reagenskelch .....	.35
One reagenskelch .....	.40
One reagenskelch .....	.55
One reagenskelch .....	.75
Two reagenskelch .....	.70
Three reagenskelch	1.65
One reagenskelch .....	.50
One reagenskelch .....	.60
One reagenskelch .....	.75
Two reagenskelch	1.80
One reagenskelch .....	.30
One reagenskelch .....	.35
One reagenskelch .....	.40
One reagenskelch .....	.40
One reagenskelch .....	.90
One spiritzflaschen, 500 cc.	4.00
One spiritzflaschen, 750 cc.	4.25
Two spiritzflaschen, 750 cc.	4.50
Two spiritzflaschen, 500 cc.	4.00
One chem. thermometer	2.50
One chem. thermometer	3.00
One chem. thermometer	3.50
One chem. thermometer	5.00
One med. thermometer	2.75
One verschluptrichser	1.75
One verschluptrichser	2.50
One scheidetrichser	2.25
One scheidetrichser	3.00
One scheidetrichser	4.00
Three vorstosse grade	1.50
Two vorstosse grade	1.20
Two vorstosse geb .....	.90
Two vorstosse geb	1.00
One wageglaschen .....	.65
One wageglaschen	1.00
One wageglaschen .....	.60
One wageglaschen .....	.70
One wageglaschen .....	.90
One wageglaschen flach .....	.50
One wageglaschen flach .....	.60
One wageglaschen .....	.30
One wageglaschen .....	.45
One wageglaschen .....	.60
One wageglaschen .....	.45
One wageglaschen .....	.50
One wageglaschen .....	.60
One vegetationskasten	220.00
One dampsfrylinder, etc.	120.00
One kpfr kalen doppel wandig, etc.	92.50
One kronenbrenner	10.00
One half kg. glaskoner	1.50
One filtrirstatir	2.50
One kg. schlauct	25.00
One kg. schlauct	17.50
One gaslampe	5.25
One gaslampe	2.10
One gaslampe	4.20
One burettetry, etc.	16.25
One vacuumeter	17.50
One reagerglas gestell	1.10
One reagerglas gestell	2.60
One hundred springkohlen	8.00
One kg. kl. glasperlen	4.50
One filtrirstatir, etc.	4.00
One filtrirstatir, etc.	2.50
One geblaselampe	12.00
One kuhler statir	4.00
One holz kuhler statir	5.00
One burssensreager, etc.	15.00
Two burssensreager, etc.	16.50
One burssensreager, etc.	9.25
One burssensreager, etc.	10.00

Two universalhulter	M.10.00
One stateo slas roh lack	1.10
One stateo slas roh lack	1.35
One stateo slas roh lack	1.80
One stateo slas roh lack	2.50
One stateo slas roh lack	4.30
One stateo slas roh lack .....	.90
One stateo slas roh lack	1.00
One stateo slas roh lack	1.10
One stateo slas roh lack	1.20
One stateo slas roh lack	1.60
One stateo slas roh lack	2.75
One stateo slas roh lack	3.90
One stateo slas roh lack	7.30
One stateo slas roh lack	2.50
One stateo slas roh lack	2.90
One stateo slas roh lack	3.40
One kl. mess gabel	1.25
One gr. mess gabel	1.50
Two gr. mess gabel	3.00
One yederrede klemme	2.00
One yederrede klemme	2.50
One doppelklemme	5.75
One voltameter	20.00
Three stativ, etc.	15.00
One waudtapel, aufgezogen, No. 1	12.50
One waudtapel, aufgezogen, No. 2	12.50
One waudtapel, aufgezogen, No. 3	12.50
One waudtapel, aufgezogen, No. 4	12.50
One waudtapel, aufgezogen, No. 5	12.50
One waudtapel, aufgezogen, No. 6	12.50
One waudtapel, aufgezogen, No. 7	12.50
One waudtapel, aufgezogen, No. 8	12.50
One waudtapel, aufgezogen, No. 9	12.50
One waudtapel, aufgezogen, No. 10	12.50
One waudtapel, aufgezogen, No. 11	12.50
One waudtapel, aufgezogen, No. 12	12.50
One regulator	6.50
One schreibdiamant	3.00
One extractions apparat	5.50
Two kuhler, 25 cm.	2.50
Two kuhler, 40 cm.	3.50
One kuhler, 60 cm.	2.50
One kuhlapparat, etc.	7.50
Two platinspysen	6.00
One burette, form D	6.00
One burette, form F	6.75
One burette kleinert	4.75
One burette, form N	3.75
One burette	6.50
Ten burrette n. chroiminer	7.50
Ten burrette n. decken	1.50
One manometer, etc.	6.75
Twenty-three gr. platinfolie	69.00
Ten platinschramm	5.00
One vanne n. mess rohmen	25.00
One geblase, No. 1	17.50
One geblase, No. 3	44.00
One thermometer	3.00
One thermometer	3.50
One thermometer	4.00
One thermoregulator	9.00
One stativ kaliapparus	6.50
One kolben n. gusscisen	7.50
One rapidkocher	4.50
One rapidkocher	9.50
Ten gaslampen	16.00
One gaslampen	2.90
One gaslampen	2.50
Two gaslampen	5.00
Two gaslampen	6.00
One gaslampen	2.25
One gaslampen	2.75
Five aupsasye	1.25
One Meuncke lampe	4.50
One nickel loppel	1.10

One kohlsensage	M.1.25
Two porose thonplatten, 9 cm. ....	.30
Two porose thonplatten, 12 cm. ....	.60
Two porose thonplatten, 20 cm.	1.50
One porose thonplatten, 25 cm.	1.10
One porose thonplatten, 30 cm.	1.50
One porose thonplatten, 35 cm.	3.00
One porose thonplatten, 40 cm.	4.50
One half kg. staniol	3.00
One klemme, K	2.50
One klemme, M	3.00
One klemme, O	4.75
One klemme, P	3.50
One klemme, Q	4.50
One klemme, R	5.00
One klemme, U	3.25
One klemme, D	2.75
One klemme, H	2.75
One federmde klemme klein	2.00
One federmde klemme klein	2.75
One doppelklemme	5.00
One doppelklemme	5.75
Seven doppelmutfen, 1,117	6.30
Fourteen doppelmutfen	14.00
One wasserstrahlufspumpe, No. 8	2.75
One wasserstrahlufspumpe	3.25
One wasserstrahlufspumpe	8.50
One exsiccator	6.50
Two filtrirkolben	1.80
One kolbentrager, 15 cm.	2.50
One kolbentrager, 25 cm.	3.25
One kolbentrager, 40 cm.	4.80
One kolbentrager, 50 cm.	5.50
One kolbentrager, m. holzletter, 12 cm.	2.75
One kolbentrager, m. holzletter, 17 cm.	3.75
One kolbentrager, m. holzletter, 20 cm.	4.25
One microlampe	3.20
One luftpumpenletter	32.00
One luftpumpenletter	27.00
One kreufschulung, 10-8	1.25
One kreufschulung, 10-10	1.30
One kreufschulung, 10-8	1.40
One kreufschulung, 10-10	1.50
Five universalhalzer	24.75
One landbad, 40-20 cm.	15.00
One klemme, A	1.75
One klemme, B	1.60
One klemme, C	1.60
One klemme, I	2.25
One klemme, K	4.50
One klemme, L	2.75
One salz mess ringe	3.50
One salz mess ringe	3.50
Five salz eis ringe	6.50
Two salz mess ringe	4.00
Ten salz eis ringe	14.00
One salz mess ringe	2.20
One salz mess ringe	2.55
One salz mess ringe	3.20
One salz eis ringe	1.80
One flaschen pory, 125 cc.	1.05
One flaschen pory, 250 cc.	1.20
One flaschen pory, 500 cc.	1.50
One flaschen pory, 750 cc.	1.80
One flaschen pory, 1,000 cc.	2.25
One flaschen pory, 1,500 cc.	3.00
One vortage m. 2 tub .....	.70
One vortage m. 2 tub .....	.80
One vortage m. 2 tub	1.20
One vortage m. 2 tub	1.50
One vortage m. 2 tub	2.50
One vortage m. 2 tub	3.00
Fifty kjeldahl kolben	15.00
Twenty kjeldahl kolben	10.00
One burette	6.50
One burettentrager	13.75

One reagensgistel	M.1.50	
One graunflasche	4.50	
Five zangen n. messg vermicell	12.50	
Two mess gabeln	3.00	
Five paar wageschalchen	6.00	
One wasserstrahlufspumpe, No. 12	33.00	
One wasserstrahlufspumpe, No. 7	16.50	
One geblase n. glas	70.00	
One regulator	9.50	
One normal spermometer	10.00	
One kupferkolben	12.00	
One salz korkbohrer, 1-8	3.50	
One Muencke lampe	6.00	
One.Hirschroald lampe	7.50	
One burettentrager	14.50	
Two pipettenflaschen	6.00	
Two kohrentrager	8.00	
One klemme, L.	2.75	
One klemme, N.	4.00	
One doppelklemme	5.00	
One doppelklemme	4.50	
Two doppelklemme	9.00	
Three salz eis ringe	6.30	
Five salz eis ringe	9.00	
One salz eis rigne	2.20	
Five salz eis ringe	9.00	
One voltameter	10.00	
One universalstatio	23.45	
One federnde klemme gross	2.50	
One federnde klemme gross	3.25	
Packing, etc.	225.25	
	M.4,282.83	\$1,038 59
Ten thousand four hundred cubic feet gas—Oakland Gas Co.		26 00
Platinum wire foil—Justinian Caire		30 00
Nine and one half feet wire cloth—Justinian Caire		4 06
Sixty gallons coal oil—Justinian Caire		15 00
Three dozen glass funnels—Justinian Caire		4 32
Three watch glasses—Justinian Caire		75
Four dozen porcelain crucibles—Justinian Caire		8 16
One retort—Justinian Caire		10 00
Ten thousand cubic feet gas—Oakland Gas Co.		25 00
Expressage—Patterson & Co.		6 50
Postage stamps—N. B. Byrne		5 00
Expressage—Patterson & Co.		21 25
Fifteen pounds acetic acid—J. Caire		2 70
Five pounds red lead—J. Caire		50
Sheet brass—J. Caire		1 25
Rivets and rivet set—J. Caire		60
Six quires glazed paper—J. Caire		3 00
Blank books—J. Caire		2 40
Two hundred tags—J. Caire		35
Two sieves—J. Caire		90
Two pairs tongs—J. Caire		2 00
Three thousand eight hundred cubic feet gas—Oakland Gas Co.		9 50
Insurance (marine)—Canton Insurance Office		8 91
Freight and expressage—Patterson & Co.		9 95
Nineteen thousand three hundred cubic feet gas—Oakland Gas Co.		48 25
Expressage—Patterson & Co.		8 50
Two copy books—Le Count Bros.		2 75
Four letter files—Le Count Bros.		2 00
One copy brush—Le Count Bros.		50
One tin hanging water-bowl—Le Count Bros.		75
Expressage—Patterson & Co.		50
Ten thousand five hundred cubic feet gas—Oakland Gas Co.		26 25
Freightage—Southern Pacific Co.		3 11
Five gallons bisulphide of carbon—John H. Wheeler		6 00
Expressage—Patterson & Co.		25
Ten thousand eight hundred cubic feet gas—Oakland Gas Co.		27 00
Expressage—Wells, Fargo & Co.		35
Bill of Eimer & Amend:		
Three dozen desiccators	\$16 50	
Fixtures for same	3 80	
Packing	75	
		21 05

Bill of Franz Schilling, in marks; total in dollars and cents:	Marks.
One hundred stp. kolben ohne tubno, 1,000 gr.	36.00
One kiste embellage	9.50
Fifty st. kolben ohne tubno, 750 gr.	16.00
Sixty-five st. kolben ohne tubno, 500 gr.	14.30
One kiste embellage	8.00
Seven st. kochflaschen, 8,000 qr.	14.00
Seven st. kochflaschen, 6,000 qr.	12.25
Eleven st. kochflaschen, 2,000 qr.	5.28
One kiste embellage	9.50
One hundred st. kochflaschen, 500 qr.	18.00
One hundred st. kochflaschen, 200 qr.	9.00
One kiste embellage	7.50
Thirty-four st. kochflaschen, 200 qr.	16.32
One hundred and twenty-five st. kochflaschen, 200 qr.	11.25
One kiste embellage	8.00
Fifty st. kochflaschen, 1,000 qr.	12.50
Sixty st. kochflaschen, 750 qr.	13.20
One kiste embellage	8.00
Forty st. kochflaschen, 750 qr.	8.80
Two hundred and ten st. kochflaschen, 250 qr.	21.00
One hundred st. kochflaschen, 30 qr.	5.00
One kiste embellage	8.00
Thirty-six st. kolben ohne tubno, 2,000 qr.	21.60
One hundred and twenty st. kolben ohne tubno, 60 qr.	10.80
One kiste embellage	7.00
Sixteen st. kolben ohne tubno, 2,000 qr.	9.60
Twenty st. kolben ohne tubno, 4,000 qr.	18.00
One kiste embellage	8.00
Two st. kolben ohne tubno, 4,000 qr.	1.80
Two st. kolben ohne tubno, 10,000 qr.	6.00
Five st. kolben ohne tubno, 8,000 qr.	11.00
Thirteen st. kolben ohne tubno, 600 qr.	24.05
One hundred st. kolben ohne tubno, 60 qr.	9.00
One kiste embellage	10.50
Twenty-five st. woulsche flaschen m. 3 U, 150 qr.	10.52
Thirteen st. woulsche flaschen m. 3 U, 200 qr.	5.85
Thirteen st. woulsche flaschen m. 3 U, 250 qr.	6.50
Twelve st. woulsche flaschen m. 3 U, 500 qr.	8.40
Twelve st. woulsche flaschen m. 3 U, 750 qr.	9.60
Six st. woulsche flaschen m. 3 U, 1,000 qr.	5.40
Four st. woulsche flaschen m. 3 U, 2,000 qr.	6.80
Three st. woulsche flaschen m. 2 U, 200 qr.	1.20
Two st. woulsche flaschen m. 2 U, 250 qr. ....	.90
Four st. woulsche flaschen m. 2 U, 500 qr.	2.40
Four st. woulsche flaschen m. 2 U, 750 qr.	2.80
Three st. woulsche flaschen m. 2 U, 1,000 qr.	2.40
One kiste embellage	7.00
Ten st. kochflaschen, 6,000 qr.	15.00
Five st. kochflaschen, 6,000 qr.	8.75
Eleven st. kochflaschen, 4,000 qr.	9.24
Fifteen st. kolben ohne tubno, 500 qr.	3.30
One kiste embellage	10.50
Ten st. kochflaschen, 4,000 qr.	8.40
Thirty-five st. kolben ohne tubno, 500 qr.	7.70
Sixty st. kolben ohne tubno, 250 qr.	9.60
One kiste embellage	8.00
Five st. gascutebindungsflaschen, 100 qr.	2.25
Eleven st. gascutebindungsflaschen, 750 qr.	4.40
One hundred and four st. gascutebindungsflaschen, 250 qr.	20.80
Forty st. gascutebindungsflaschen, 500 qr.	12.00
One kiste embellage	8.00
Five st. kochflaschen, 10,000 qr.	15.00
Three st. kochflaschen, 8,000 qr.	6.60
One kiste embellage	8.00
Three st. kochflaschen, 8,000 qr.	6.60
Two hundred st. kolben ohne tubno, 200 qr.	24.00
One kiste embellage	8.50
Forty-five and one half ko. glasrohren, 4-16 m. d'cm.	45.50
Seven ko. glasrohren, 21-23 m. d'cm.	8.40
One kiste embellage	3.00
One hundred and fifty st. kolben ohne tubno, 250 qr.	24.00
Two hundred st. kolben ohne tubno, 100 qr.	20.00
One kiste embellage	8.50
Fourteen st. retorten mit stopsel, 2,000 qr.	11.20
Nineteen st. retorten mit stopsel, 1,000 qr.	10.45

One kiste embellage	M. 8.50
Forty-three st. retorten mit stopsel, 750 qr.	30.10
One st. retorten mit stopsel, 1,000 qr. ....	.55
One kiste embellage	8.00
One hundred and sixty salze becherglaser n. 1-5	120.00
One kiste embellage	6.50
Six salze becherglaser n. 1-16	28.50
Twenty salze becherglaser n. 1-12	60.00
One kiste embellage	7.00
Twenty-six einzelkistchen	11.60
Fifty salze becherglaser n. 1-10	100.00
Fifty einzelkisten	17.50
One kiste embellage	8.00
Fifty-five st. retorten mit stopsel, 1,000 qr.	20.90
One kiste embellage	8.00
One hundred and ten st. retorten mit stopsel, 250 qr.	33.00
One kiste embellage	8.00
Thirty ko. cylinderrohren n. 12-16	30.00
Six st. sicherheitsrohren m. 4 kugeln, No. 586	2.10
Thirteen st. sicherheitsrohren m. 2 kugeln, No. 586	2.60
Six st. sicherheitsrohren m. 1 kugeln, No. 586	1.08
One kiste embellage	5.00
One hundred salze becherglaser n. 1-5	1.50
One kiste embellage	6.00
Twenty-one st. preparatenglaser m. rand	8.40
One hundred and seventy-six st. preparatenglaser m. rand	44.00
One kiste embellage	7.00
Four st. retorten mit stopsel, 5,000 qr.	7.20
Three st. retorten mit stopsel, 4,000 qr.	4.50
Seventy-five retorten mit stopsel, 200 qr.	20.25
One kiste embellage	9.50
Sixty-five st. retorten mit stopsel, 500 qr.	24.70
One kiste embellage	9.00
Thirty st. reagirkelecltn mit ausguss, 25 cm. f.	10.50
Twenty-one st. reagirkelecltn, 15 cm. hoch	5.25
Twenty-five st. reagirkelecltn, 15 cm. hoch	5.00
Twenty-six st. reagirkelecltn, 10 cm. hoch	4.16
Sixty st. kochflaschen, 100 qr.	3.60
One kiste embellage	7.00
Forty-two st. retorten mit stopsel, 750 qr.	29.40
One kiste embellage	8.00
Twenty-five st. retorten mit stopsel, 750 qr.	17.50
Forty st. retorten mit stopsel, 100 qr.	8.00
One kiste embellage	8.00
Forty st. retorten mit stopsel, 250 qr.	12.00
Twenty-two st. retorten mit stopsel, 80 qr.	3.98
Fifty st. retorten mit stopsel, 200 qr.	13.50
Thirty st. kochflaschen, 100 qr.	1.80
One kiste embellage	8.00
Thirty st. retorten mit stopsel, 10,000 qr.	3.75
Six st. retorten mit stopsel, 6,000 qr.	13.20
Twenty st. retorten mit stopsel, 750 qr.	14.00
One kiste embellage	9.50
One hundred st. reagirglaser, 5 cm. lang 6 mm. d'cm. ....	.75
One hundred st. reagirglaser, 5 cm. lang 10 mm. d'cm.	1.00
One hundred st. reagirglaser, 5 cm. lang 13 mm. d'cm.	1.20
One hundred st. reagirglaser, 5 cm. lang 16 mm. d'cm.	1.40
One hundred st. reagirglaser, 5 cm. lang 20 mm. d'cm.	1.50
One hundred st. reagirglaser, 8 cm. lang 6 mm. d'cm.	1.00
One hundred st. reagirglaser, 8 cm. lang 10 mm. d'cm.	1.20
One hundred st. reagirglaser, 8 cm. lang 13 mm. d'cm.	1.30
One hundred st. reagirglaser, 8 cm. lang 16 mm. d'cm.	1.50
One hundred st. reagirglaser, 8 cm. lang 20 mm. d'cm.	1.70
Two hundred st. reagirglaser, 10 cm. lang 11 mm. d'cm.	2.60
Two hundred st. reagirglaser, 10 cm. lang 13 mm. d'cm.	3.20
Two hundred st. reagirglaser, 10 cm. lang 16 mm. d'cm.	4.00
Two hundred st. reagirglaser, 10 cm. lang 20 mm. d'cm.	5.00
Two hundred st. reagirglaser, 10 cm. lang 26 mm. d'cm.	6.00
Two hundred st. reagirglaser, 12 cm. lang 10 mm. d'cm.	3.60
Two hundred st. reagirglaser, 12 cm. lang 13 mm. d'cm.	4.00
Two hundred st. reagirglaser, 12 cm. lang 16 mm. d'cm.	4.40
Two hundred st. reagirglaser, 12 cm. lang 20 mm. d'cm.	6.00
Two hundred st. reagirglaser, 15 cm. lang 13 mm. d'cm.	4.40
One kiste embellage	6.00
Four einzelkisten	6.00
Three st. retorten mit stopsel, 10,000 qr.	11.25

Three st. retorten mit stopsel, 8,000 qr.	M. 9.60
Twenty-one st. retorten mit stopsel, 750 qr.	14.70
One kiste embellage	9.50
One hundred st. reagirglaser, 15 cm. lang 26 mm. d'cm.	3.90
Sixty-four st. reagirglaser, 15 cm. lang 33 mm. d'cm.	2.80
Two hundred st. reagirglaser, 15 cm. lang 20 mm. d'cm.	6.20
Four hundred st. reagirglaser, 15 cm. lang 16 mm. d'cm.	10.80
One hundred st. reagirglaser, 20 cm. lang 33 mm. d'cm.	6.00
One hundred st. reagirglaser, 20 cm. lang 26 mm. d'cm.	5.00
Two hundred st. reagirglaser, 12 cm. lang 26 mm. d'cm.	7.00
Twenty-five st. reagirglaser, 25 cm. lang 35 mm. d'cm.	2.25
Twenty-five st. reagirglaser, 30 cm. lang 30 mm. d'cm.	2.50
One kiste embellage	8.00
Twenty-six st. trichterrohren, Huttentrichter	6.00
Fifty-five st. trichterrohren, Glockentrichter	8.25
Eleven st. sicherheitsrohren ohne K, No. 586	1.65
Eleven st. sicherheitsrohren mit 2 k., H.	3.63
Eleven st. sicherheitsrohren mit 1 k., H.	2.75
Eleven st. sicherheitsrohren ohne k., H.	2.75
Twenty-five trichterrohren, Huttentrichter	5.00
Two hundred st. kugelrohren aus schwerschmelz, B	40.00
Fifty st. reagirglaser, 25 cm. lang 30 mm. d'cm.	4.00
Fifty st. reagirglaser, 25 cm. lang 25 mm. d'cm.	3.00
Twenty-six st. reagirglaser, 25 cm. lang 40 mm. d'cm.	3.12
Two hundred st. reagirglaser, 20 cm. lang 20 mm. d'cm.	8.09
Twenty-five st. reagirglaser, 30 cm. lang 25 mm. d'cm.	2.25
Thirteen st. reagirglaser, 30 cm. lang 35 mm. d'cm.	1.58
One kiste embellage	8.00
Fifty ko. massive stabe, 10 mm. d'cm.	50.00
One kiste embellage	3.50
One st. retorte m. st., 5,000 qr.	1.80
Three st. retorte m. st., 4,000 qr.	4.50
Four st. retorte m. st., 200 qr.	1.08
Thirty-five st. retorte m. st., 100 qr.	7.00
One hundred and twenty st. kochflaschen, 100 qr.	7.20
Fifty-five st. reagirglaser, 15 cm. lang 40 mm. d'cm.	3.30
Thirteen st. reagirglaser, 30 cm. lang 40 mm. d'cm.	1.95
One kiste embellage	8.00
Fifteen st. trichter, 21 cm. d'cm.	6.75
Fifteen st. trichter, 16 cm. d'cm.	3.75
Fifty-two st. trichter, 7 cm. d'cm.	4.18
One kiste embellage	8.00
One hundred and fifteen st. trichter, 10 cm. d'cm.	15.52
Fifteen st. trichter, 18 cm. d'cm.	5.40
One kiste embellage	8.00
Sixty-five st. gascutbindungsflaschen, 500 qr.	19.50
Three st. woulsche flaschen m. 3 ft., 3,000 qr.	6.60
Two st. woulsche flaschen m. 2 ft., 2,000 qr.	3.00
Two st. woulsche flaschen m. 2 ft., 3,000 qr.	4.00
One hundred and fifteen st. trichter, 5 cm. d'cm.	8.05
One hundred st. trichter, 5 cm., d'cm.	6.00
Fifty-two st. trichter, 7 cm. d'cm.	4.16
Twenty-five st. trichter, 8 cm. d'cm.	2.50
One kiste embellage	8.00
Forty-two salze becherglaser, Nos. 1-5	31.50
Two hundred salze becherglaser, Nos. 1-3	76.00
One kiste embellage	6.00
One hundred and thirty st. preparetenglaser m. rand, 100-60 mm.	32.50
One hundred and twenty-five st. trichter, 8 cm. d'cm.	12.50
Thirty-five st. trichter, 13 cm. d'cm.	7.00
One kiste embellage	8.00

M. 2,478.12

Beglaubigungsgekuhren..... 10.70

Gebuhren agenten..... 1.40

M. 2,490.82 \$604 02

Bill of James R. McDonald & Co.:

Freight paid on forty-seven cases glassware from Gehlberg to Hamburg, Germany..... M. 140.70

Cartage and shipping charges..... 63.60

Forwarding commission..... 70.50

Postage and petties..... 1.50

M. 276.30

67 00

Bill of Samuel Stanton, in pounds, shillings, and pence; total in dollars and cents:		
Two thermometers, with single cylinder bulb, graduated stems, 40 cm. long; one reading from 5° to 15° centl., and the other from 13° to 33° centl.	£	s. d.
One thermometer with double cylinder bulb and means of adjusting mercury, with 40 cm. divided stem, embracing 3° or 4° centl., divided into arbitrary divisions of cms. and mms.	6	0 0
One mahogany case for same.	6	0 0
One clockwork supper	15	0
One Brown's calibrating apparatus	8	0 0
One copper calorimeter jacket	4	4 0
Tin lined case	5	0 0
Three ounces 680 platinum calorimeter, 620 platinum stirrer, and 270 platinum gauge	15	6
Single stirring apparatus with electro-magnetic motion	18	5 6
Packing case	10	10 0
Consular invoices	1	0 6
Carriage to Liverpool	13	0
Bills of lading and postage	7	6
Dues, entries, etc.	2	6
Freight to San Francisco	5	6
Agency and insurance	1	90 0
Sundry expenses	15	6
Commission	16	9
	3	0 0
	£63	10 3
Less on packing boxes		10 0
	£63	0 3
Custom House entry on seventy-two cases chemicals and glassware—G. W. Reed.	\$308	48
Freight on sixty-six packages from Hamburg to San Francisco—Wm. Wolff & Co.	170	00
State toll on same—Wm. Wolff & Co.	35	
Three Becker balances and weights—Justinian Caire	191	10
Freight and expressage—Patterson & Co.	41	00
Two hundred and eighteen pounds aqua ammonia—San Francisco Gaslight Co.	17	45
Two carboys—San Francisco Gaslight Co.	5	00
One dozen blank books—Le Count Bros.	50	
One dozen blank books—Le Count Bros.	60	
One dozen blank books—Le Count Bros.	75	
One half dozen memorandum books—Le Count Bros.	3	00
One half dozen memorandum books—Le Count Bros.	4	00
One copying press—Le Count Bros.	10	00
One bottle ink—Le Count Bros.	1	00
One quart mucilage—Le Count Bros.	50	
One box rubber bands—Le Count Bros.	1	00
One box pens—Le Count Bros.	75	
Two baskets—Le Count Bros.	1	50
Two carboys muriatic acid—Golden City Chemical Works	12	40
One carboy sulphuric acid—Golden City Chemical Works	4	18
Freight on two cases glassware from Philadelphia—Southern Pacific Co.	34	65
Expressage—Patterson & Co.	1	00
Insurance—Canton Insurance Office	2	56
Salaries for the year ending June 30, 1891	12,506	05

\$17,567 31*To University Site Improvements.*

Splicing pole to wagon—Nelson & McLellan	\$1	50
Labor, as per June payroll	301	00
One gallon linseed oil—J. McClain	1	25
Five cans axle grease—J. McClain	75	
Twenty-five sacks rolled barley—B. E. Hickok & Co.	22	75
Nineteen sacks bran—B. E. Hickok & Co.	8	20
Two sacks oil meal—B. E. Hickok & Co.	2	35
Twelve pieces 6-inch glazed pipe—Savage Bros.	\$7	20
Less 50 per cent.	3	60
		3 60
One half dozen hoes—Savage Bros.	2	75
Repairing Oxford-Street crossing—J. J. Dunn	100	00
Splicing knife—Nelson & McLellan	75	
Repairing rake—Nelson & McLellan	2	75
One bolt—Nelson & McLellan	15	
Eight new shoes—Nelson & McLellan	4	00
Four iron wedges repaired—Nelson & McLellan	1	00
Repairing saw—Nelson & McLellan	1	50

Labor, as per July payroll.....	\$224 50	
Labor, as per August payroll.....	222 00	
Insurance on hay for thirty days—New Zealand Co.....	1 20	
Baling thirteen and one fourth tons hay—W. Keith.....	26 40	
Brimstone—Kelsey Bros.....	15	
Sharpening three picks—Nelson & McLellan.....	45	
Sharpening one pick—Nelson & McLellan.....	15	
Steeling one pick—Nelson & McLellan.....	75	
Eight new shoes—Nelson & McLellan.....	4 00	
One case Star oil—Joseph McClain.....	2 80	
Labor, as per September payroll.....	388 00	
Labor, as per October payroll.....	291 50	
Nine hundred and twenty pieces 8-inch drain pipe—Savage Bros.....	\$1,380 00	
Two pieces 18x18 Y branches—Savage Bros.....	7 50	
Five pieces 18x12 T branches—Savage Bros.....	30 00	
One piece 18x10 T branch—Savage Bros.....	3 00	
Six pieces 12-inch pipe—Savage Bros.....	4 50	
	\$1,425 00	
Less 20 per cent.....	285 00	
		1,140 00
Ten barrels Portland cement—Remillard Brick Co.....	42 50	
One hoe—Savage Bros.....	40	
Repairing one half of Oxford-Street culvert—J. J. Dunn.....	149 00	
Two Champion iron wheelbarrows—Savage Bros.....	6 50	
Two garden iron wheelbarrows—Savage Bros.....	11 00	
Four barrels Portland cement—Remillard Brick Co.....	17 00	
Sharpening one share—Nelson & McLellan.....	25	
Repairing cart—Nelson & McLellan.....	14 50	
Repairing chains—Nelson & McLellan.....	60	
Sharpening four picks—Nelson & McLellan.....	60	
Repairing cart—Nelson & McLellan.....	15 50	
Eight new shoes and repairing brake—Nelson & McLellan.....	5 00	
Labor, as per November payroll.....	271 50	
One dozen pick handles—Savage Bros.....	3 00	
Payment on account of sidewalks—W. D. Perine.....	750 00	
Bill of Oakland Paving Co. for macadamizing and grading north half of Allston Way:		
Grading 1,650 cubic yards.....	\$1,072 50	
Curbing 1,139 linear feet.....	136 68	
Macadamizing 26,150.52 square feet.....	2,418 92	
Engineer's fees on 1,170.25 feet.....	58 51	
		3,686 61
Bill of Oakland Gas Co.:		
Eighty-two pieces 4-inch pipe.....	\$425 00	
One piece 8-inch pipe.....	10 00	
Eight pieces 3-inch pipe.....	28 00	
Four hundred and thirty pounds fittings.....	21 00	
Two 3-inch plugs.....	1 35	
Three pounds wrought-iron fittings.....	45	
One hundred feet 2-inch wrought-iron pipe.....	18 00	
One hundred and four feet 1½-inch wrought-iron pipe.....	11 44	
Six hundred and thirty pounds pig lead.....	44 10	
Three barrels coke.....	3 00	
One hundred pounds gaskett.....	6 00	
One socket wrench.....	3 00	
Drayage.....	18 50	
One hundred and eighty-one days' labor.....	566 50	
	\$1,156 34	
Less pipe and fittings returned.....	13 63	
		1,142 71
Labor, as per December payroll.....	289 50	
One plate and clamps—Nelson & McLellan.....	1 50	
One share pointed and patched—Nelson & McLellan.....	1 00	
One share pointed, and eight bolts—Nelson & McLellan.....	1 00	
One share sharpened—Nelson & McLellan.....	25	
Repairs to garden shears—Nelson & McLellan.....	25	
One dozen files—Savage Bros.....	1 50	
Bill of W. D. Perine—partial payment on account of sidewalks.....	928 21	
Building gutters—J. J. Dunn.....	10 50	
Eight new shoes—Nelson & McLellan.....	4 00	
Four rods, four braces, two plates, two pins—Nelson & McLellan.....	2 50	
Expressage—Patterson & Co.....	3 00	
Labor repairing gutters—Geo. Miner.....	5 00	
Labor, as per January payroll.....	186 25	

Payment in full for sidewalks—W. D. Perine	\$559 41
One thousand five hundred and forty-nine pounds seed oats—Paul Keyser	33 30
Repairing steps North and South Halls—Robert McKillican	475 00
One thousand pounds rolled barley—Stewart & Trowbridge	17 75
Five hundred pounds bran—Stewart & Trowbridge	6 50
Advertising for bids for Campus—San Francisco "Examiner"	15 40
Repairing squirrel smoker—J. M. McNamara	2 00
One Y branch—Patrick Begley	\$0 50
Two elbows—Patrick Begley	64
Sixteen feet sewer pipe—Patrick Begley	6 08
	<hr/>
	\$7 22
Less	3 22

	4 00
Sixteen pieces sewer pipe—Savage Bros.	3 36
Advertising for Campus—"Tribune" Publishing Co.	13 35
Labor, as per February payroll	173 25
Advertising for Campus—San Francisco "Chronicle"	22 15
Grading Campus—James McMullen	44 00
Grading Campus—James McMullen	40 00
Labor, as per March payroll	179 00
Eight new shoes—Nelson & McLellan	4 00
Repairing wagon—Nelson & McLellan	4 25
Forty-five and one half hours' work on map of grounds—W. C. Allen	13 65
Two copies typewriting contract for Campus—Grace Mahoney	75
Grading Campus—Jas. McMullen	16 00
Twenty-seven hours work computing earthwork on Students' Campus—E. A. Byler	8 10
Grading Campus—Jas. McMullen	120 00
Labor, as per April payroll	255 80
One share pointed and one bolt to gate—Nelson & McLellan	1 25
Plate for furnace—Nelson & McLellan	50
Repair of harrow—Nelson & McLellan	50
One hundred and forty-three and one half hours' work on map—W. C. Allen	43 05
Labor as watchman—John Davis	3 00
One half dozen mowing machine knives—Deere Implement Co.	50
Two thousand pounds rolled barley—Stewart & Trowbridge	37 00
One thousand pounds bran—Stewart & Trowbridge	10 50
Oil cake—Stewart & Trowbridge	1 95
One shovel share sharpened—Nelson & McLellan	50
Two pairs hinges, twelve bolts, twelve washers—Nelson & McLellan	3 00
One hasp, two staples—Nelson & McLellan	75
Four one half rims—Nelson & McLellan	7 00
Two spokes—Nelson & McLellan	50
Two tires set—Nelson & McLellan	2 00
Singletree repaired—Nelson & McLellan	50
One third dozen grass scythes—Dunham, Carrigan & Hayden Co.	4 00
One sixth dozen patent snaths—Dunham, Carrigan & Hayden Co.	1 50
One half dozen hay rakes—Dunham, Carrigan & Hayden Co.	3 00
One third dozen steel garden rakes—Dunham, Carrigan & Hayden Co.	3 15
Computing earthwork for Campus—E. A. Byler	3 30
Grading Campus—Jas. McMullen	242 75
Labor, as per May payroll	235 40
Ninety-five and one half hours' work on map of grounds—W. C. Allen	28 95
One case Elaine oil—J. McClain	1 50
Salaries for the year ending June 30, 1891	362 92

\$13,377 32*To Fuel.*

Fifty tons Wellington coal—Renton Coal Co.	\$701 40
Thirteen tons Anthracite coal—Renton Coal Co.	107 70
One hundred and forty-five grain sacks—Renton Coal Co.	7 35
Thirty-nine gunnie sacks—Renton Coal Co.	3 90

\$820 35*To Equipment and Repairs.*

One rack for hauling chairs—Nelson & McLellan	\$14 00
Painting building—George C. Gottung	660 00
Repairing roof of Library building—W. B. Glenn	75 00
Repairing blackboards—W. H. Andrews & Co.	350 00
Repairing blackboards—W. H. Andrews & Co.	32 00
Painting buildings—George C. Gottung	450 00
Twenty dozen pairs 2-inch iron butts—Savage Bros.	5 50
Two gross hat hooks—Savage Bros.	2 75

One gross porcelain knobs—Savage Bros.	\$1 50
One gross japanned buttons	1 00
Thirty-six chairs—California Furniture Co.	81 00
Repairing roof—John J. Menges	12 00
Two pounds solder—John J. Menges	40
One sheet tin—John J. Menges	10
Lettering office door—J. A. Johnson	6 00
Labor for month of July—John Davis	54 00
Five hundred feet 3x4 redwood—Henry W. Taylor	10 00
Five hundred feet 1x6 redwood—Henry W. Taylor	20 00
Five hundred feet 2x4 pine—Henry W. Taylor	
Nine hundred and forty-eight feet 2x12 redwood—Henry W. Taylor	36 20
Five hundred feet 1x12 redwood—Henry W. Taylor	
Mill work—Henry W. Taylor	10 25
Cartage—Henry W. Taylor	2 00
Five hundred feet 1x3 redwood—Henry W. Taylor	25 00
Five hundred feet 1x12 redwood—Henry W. Taylor	
One thousand and fifty-two feet 2x12 redwood—Henry W. Taylor	26 30
Five hundred feet 1x3 pine—Henry W. Taylor	12 50
One thousand feet 1x4 T. and G. pine—Henry W. Taylor	34 00
Three hundred feet 2x3 T. and G. pine—Henry W. Taylor	6 90
Five hundred feet 1x4 T. and G. and B. redwood—Henry W. Taylor	17 00
Labor in North Hall—J. M. McNamara	11 35
Seventy-five pounds 1½-inch lead pipe—J. M. McNamara	7 00
Twenty-four feet ¾-inch galvanized pipe—J. M. McNamara	2 40
Five ½-inch fittings—J. M. McNamara	70
Four pounds solder—J. M. McNamara	1 00
Lining sink—J. M. McNamara	6 00
Twelve feet 3-inch spiral gas leader—J. M. McNamara	1 80
Repairing basin—J. M. McNamara	1 00
One sack charcoal—J. M. McNamara	95
Labor in North Hall—J. M. McNamara	12 35
Twenty feet 2-inch cast-iron pipe—J. M. McNamara	2 00
Branch and bend—J. M. McNamara	1 05
One globe valve, 1x1½—J. M. McNamara	1 95
Thirty-five pounds 1½-inch lead pipe—J. M. McNamara	3 50
Seven pounds solder—J. M. McNamara	1 75
Two by two-inch brass ferrules—J. M. McNamara	35
One sack charcoal—J. M. McNamara	95
Cement—J. M. McNamara	50
One 1½-inch trap	1 10
Twelve pounds calking lead—J. M. McNamara	50
Painting buildings—Geo. C. Gottung	161 25
Sixty-six yards Brussels carpet—Jos. Fredericks & Co.	99 00
Thirty-three and one third yards Brussels carpet—Jos. Fredericks & Co.	50 00
Six yards Brussels carpet—Jos. Fredericks & Co.	9 00
Two oak table desks—Jos. Fredericks & Co.	70 00
Twenty arm chairs, in leather—Jos. Fredericks & Co.	210 00
Ten oak tables—Geo. H. Fuller	95 00
One oak chair—Geo. H. Fuller	10 00
One hat rack—Geo. H. Fuller	10 00
One bookcase—Geo. H. Fuller	20 00
One half dozen cuspidors—Payot, Upham & Co.	3 75
Painting engine house and boiler house—Geo. C. Gottung	40 00
Painting agricultural building—Geo. C. Gottung	100 00
Painting observatory—Geo. C. Gottung	75 00
Painting horse shed—Geo. C. Gottung	35 00
Painting lockers, etc.—Geo. C. Gottung	54 90
Repairing chimneys, South Hall—Geo. C. Gottung	5 00
Material for eighty new lockers—Niehaus Bros. & Co.	118 00
Twenty feet 3x4 gutters—Niehaus Bros. & Co.	1 20
Crown molding—Niehaus Bros. & Co.	40
Fifty pounds putty—E. G. Buswell & Co.	2 50
Two rolls border—H. Richards	75
One yard felt—W. & J. Sloane & Co.	1 25
Five yards gimp—W. & J. Sloane & Co.	25
One dozen locks—Savage Bros.	3 00
One lock—Savage Bros.	15
One brush—E. G. Buswell & Co.	50
Moving stove—J. M. McNamara	2 50
Zinc for stove—J. M. McNamara	1 75
Damper for stove—J. M. McNamara	25
Zinc flashing—J. M. McNamara	1 00
Isinglass—J. M. McNamara	25
One galvanized drum—J. M. McNamara	3 80
Labor—John Davis	52 00

Expressage—Patterson & Co.	\$9 25
One zinc oil can—The Samuel Hill Co.	20
Plastering in North Hall—H. L. Whitney	30 00
Four thousand cubic feet gas—Oakland Gas Co.	10 00
Sixty perforated chair seats—R. F. Osborn & Co.	14 00
Kalsomining North Hall—C. B. Rutherford	153 75
Oiling slate on South Hall—Geo. C. Gottung	30 00
Three hundred and thirty yards cocoa matting—McGovern & Cahill	222 75
One hundred and fifteen yards cocoa matting—McGovern & Cahill	77 63
Two marble basins, waste pipe, and faucets—J. M. McNamara	40 00
Sixteen feet stove-pipe—M. De La Montanya	5 60
Eight feet stove-pipe—M. De La Montanya	2 40
Four corrugated elbows—M. De La Montanya	3 00
One corrugated elbow—M. De La Montanya	65
One damper—M. De La Montanya	25
One half day's labor—M. De La Montanya	3 00
Labor—John Davis	52 00
One oak desk—Geo. H. Fuller	60 00
One thousand feet redwood—Henry W. Taylor	20 00
Eight thousand shingles—Henry W. Taylor	18 00
One thousand feet redwood—Henry W. Taylor	20 00
One inkstand—Samuel Carson	1 50
Painting buildings—Geo. C. Gottung	623 75
Picture molding—Niehaus Bros. & Co.	3 50
Two washstands—Niehaus Bros. & Co.	6 50
One pulley—Savage Bros.	10
Sash cord—Savage Bros.	25
One dozen staples—Savage Bros.	10
One half dozen screw eyes—Savage Bros.	05
One dozen packages matches—J. McClain	50
One dozen $\frac{3}{4}$ and $\frac{1}{2}$ -inch caps—J. M. McNamara	50
Two spools copper wire—Savage Bros.	1 00
Molding hooks—Savage Bros.	50
One jug and glass—Fred. Lautzen	60
One iron safe—A. L. Jones & Co.	500 00
Labor for month of October—James Tait	54 00
One bronze lock—Dunham, Carrigan & Hayden Co.	4 60
One pair butts—Dunham, Carrigan & Hayden Co.	2 25
Three dozen cup locks—Dunham, Carrigan & Hayden Co.	18 00
One dozen Yale latches—Dunham, Carrigan & Hayden Co.	22 50
Nine dozen key blanks—Dunham, Carrigan & Hayden Co.	4 50
One Empire ladder, 10-foot—G. W. Armes & Co.	3 50
One dozen No. 2 Excelsior brooms—G. W. Armes & Co.	2 55
One dozen floor brushes—G. W. Armes & Co.	12 75
One dozen dust brushes—G. W. Armes & Co.	8 08
One half dozen dustpans—G. W. Armes & Co.	60
One half dozen fire shovels—G. W. Armes & Co.	60
One dozen galvanized coal hods—G. W. Armes & Co.	4 50
One dozen turkey dusters—G. W. Armes & Co.	6 80
Forty pounds white Castile soap—G. W. Armes & Co.	3 70
One dozen galvanized iron pails—G. W. Armes & Co.	4 15
One can matches—G. W. Armes & Co.	1 75
Six sponges—G. W. Armes & Co.	1 00
One No. 20 Bradford stove—M. De La Montanya	16 00
Eight joints stove-pipe—M. De La Montanya	2 40
Two corrugated elbows—M. De La Montanya	1 30
One collar and damper—M. De La Montanya	35
One half sheet zinc—M. De La Montanya	75
Labor and cartage—M. De La Montanya	3 00
Two cupboard catches—Savage Bros.	20
Four pairs butts—Savage Bros.	80
Three gallons varnish—E. G. Buswell & Co.	12 00
Two thousand five hundred cubic feet gas—Oakland Gas Co.	6 25
Five oak Vienna chairs—Joseph Fredericks & Co.	12 50
Oiling and whitewashing brick on new Chemical Laboratory—Geo. C. Gottung	240 00
Twenty-four pounds lead pipe—J. M. McNamara	2 40
One $\frac{3}{4}$ -inch plain bibb—J. M. McNamara	1 25
Ten feet 2-inch galvanized pipe—J. M. McNamara	1 00
Solder and coal—J. M. McNamara	1 00
Labor on same—J. M. McNamara	3 35
One chair cushion—California Furniture Co.	6 00
One 8-inch hinge, hasp, and screws—A. Erlandsen	15
One dozen key blanks—Dunham, Carrigan & Hayden Co.	1 80
Three gross screw hooks—Dunham, Carrigan & Hayden Co.	1 44
One gross washers for spindle—Dunham, Carrigan & Hayden Co.	15
One gross knob screws—Dunham, Carrigan & Hayden Co.	60

One gross blued screws—Dunham, Carrigan & Hayden Co.	\$0 45
One half dozen spindles—Dunham, Carrigan & Hayden Co.	18
Repairing door check—Frank D. Morrill	1 50
Repairing three shower baths in Gymnasium, and material—J. M. McNamara	4 50
Repairing pipe in South Hall—J. M. McNamara	3 00
Two terra-cotta thimbles—Savage Bros.	80
One half dozen glasses—J. McLain	30
Repairing door checks—Frank D. Morrill	1 75
Two yards enamel cloth—W. & J. Sloane & Co.	1 20
One paper tacks—W. & J. Sloane & Co.	10
One yard felt—W. & J. Sloane & Co.	1 25
One No. 20 Bradford stove—M. De La Montanya	16 00
Nine joints stove-pipe—M. De La Montanya	2 70
Two elbows, corrugated—M. De La Montanya	1 30
One elbow, pieced—M. De La Montanya	30
One half sheet zinc—M. De La Montanya	75
Damper—M. De La Montanya	25
Collar—M. De La Montanya	10
One day's labor—M. De La Montanya	3 00
One oak desk—George H. Fuller	40 00
One office chair—George H. Fuller	7 00
One 6-foot standing desk—George H. Fuller	18 00
One bookkeeper's chair—George H. Fuller	5 50
One revolving bookcase—George H. Fuller	21 00
Forty brass picture hooks—Savage Bros.	1 00
Two dozen P. S. rod chairs—California Furniture Co.	38 00
Twenty-four arm rests—California Furniture Co.	16 00
Labor for month of November	50 00
Two 6-inch bolts—Savage Bros.	50
Six elbow catches—Dunham, Carrigan & Hayden Co.	60
Two Russia fenders—Taylor Goodrich	5 00
One bowl and setting—Sanitary Plumbing Co.	2 75
Thirty-seven yards linoleum—McGovern & Cahill	35 15
One Smyrna rug—McGovern & Cahill	8 00
Gas pipe and labor, South Hall—J. M. McNamara	7 00
Three tables—Niehaus Bros. & Co.	12 00
Four new cases—Niehaus Bros. & Co.	63 00
Three small doors—Niehaus Bros. & Co.	3 00
Eight hundred feet white cedar—Niehaus Bros. & Co.	}
One hundred and fifty feet pine—Niehaus Bros. & Co.	
One door—Niehaus Bros. & Co.	88 00
Thirteen hundred cubic feet gas—Oakland Gas Co.	3 25
Twelve hundred cubic feet gas—Oakland Gas Co.	3 00
Labor for month of December	54 00
One galvanized iron screen—M. De La Montanya	8 00
One half dozen cupboard catches—A. Erlandsen	50
One third dozen window catches—A. Erlandsen	50
Four and one half yards duck—Neville & Co.	2 25
One dozen joint butts—Savage Bros.	60
Four dozen screws—Savage Bros.	30
One half dozen wardrobe hooks—A. Erlandsen	1 20
One half dozen hooks and eyes—A. Erlandsen	20
One No. 2 Cottage Home stove—M. De La Montanya	9 00
Seven joints Russia iron pipe—M. De La Montanya	5 25
Three corrugated elbows—M. De La Montanya	3 00
One square elbow—M. De La Montanya	75
Damper and collar—M. De La Montanya	85
One stove board—M. De La Montanya	2 50
Setting up same—M. De La Montanya	3 00
Plumbers' repairs, South Hall—J. M. McNamara	9 00
Plumbers' repairs, North Hall—J. M. McNamara	4 00
Two Dart stoves—M. De La Montanya	13 00
Six joints stove-pipe—M. De La Montanya	1 50
Two elbows—M. De La Montanya	50
Two dampers—M. De La Montanya	50
Two collars—M. De La Montanya	20
One sheet zinc—M. De La Montanya	1 50
Two safety wall tubes—M. De La Montanya	3 00
Labor setting up—M. De La Montanya	5 00
Tinuing Library building—J. M. McNamara	25 00
Two Oakland directories—Dutton & Partridge	10 00
One antique desk—George H. Fuller	30 00
Filing four saws—A. Erlandsen	1 50
One set Yale casters—A. Erlandsen	85
One terra-cotta thimble—Savage Bros.	65
Labor for month of January	54 00

Eight hundred cubic feet gas—Oakland Gas Co.	\$2 00
Eighteen joints stove-pipe—J. M. McNamara	6 60
Two elbows—J. M. McNamara	70
Labor setting up stove, North Hall—J. M. McNamara	3 50
Repairing water-closet, North Hall—J. M. McNamara	4 25
One piece gutter—Niehaus Bros. & Co.	1 60
Two basin faucets, and labor—J. M. McNamara	4 00
Fitting key—A. Erlandsen	25
Collar for stove-pipe—J. J. Menges	25
Damper for stove-pipe—J. J. Menges	25
Fitting same—J. J. Menges	50
One and one half yards green drill—W. & J. Sloane & Co.	75
Two papers tacks—A. Erlandsen	10
Two key blanks—A. Erlandsen	20
Repairing spring—A. Erlandsen	25
Repairing shower bath—J. M. McNamara	1 50
Labor for month of February—John Davis	51 00
Three thousand two hundred cubic feet gas—Oakland Gas Co.	8 00
Labor for month of March—John Davis	52 00
One Cottage Home stove—M. De La Montanya	9 00
One joint Russia iron pipe—M. De La Montanya	75
One Russia iron fireboard—M. De La Montanya	1 50
One damper—M. De La Montanya	25
One oxidized W. L. board—M. De La Montanya	2 50
Labor and cartage on same—M. De La Montanya	3 00
Three dozen stools—Indianapolis Furniture Co.	27 00
Six kitchen tables—E. Hook	12 00
One gallon alcohol—E. G. Buswell & Co.	3 00
Two pounds shellac—E. G. Buswell & Co.	1 00
One hundred and twelve feet white cedar—Niehaus Bros. & Co.	16 00
One thousand feet lattice—Niehaus Bros. & Co.	10 00
One gallon linseed oil—H. Richards	80
Two wood clamps—A. Erlandsen	1 10
Two chest locks—A. Erlandsen	50
One gas lighter—A. Erlandsen	75
One box tapers—A. Erlandsen	25
Three yards oilcloth—Max. Greenhood & Co.	1 20
Pipe and labor for nine brackets—J. M. McNamara	16 00
Repairing water-closet in Gymnasium—J. M. McNamara	5 00
One 1½-inch globe valve—J. M. McNamara	1 50
Repairing faucets and fittings—J. M. McNamara	6 00
Six joints stove-pipe—J. M. McNamara	1 80
One elbow—J. M. McNamara	30
Repairing closet—J. M. McNamara	1 50
One light pendant—J. M. McNamara	2 00
Labor for month of April	51 00
Two thousand two hundred cubic feet gas—Oakland Gas Co.	5 50
Repairing water-closet in South Hall—J. M. McNamara	2 10
Repairing leader in North Hall—J. M. McNamara	3 00
Repairing roof of Observatory—J. M. McNamara	1 50
Repairing shower in Gymnasium—J. M. McNamara	1 00
One thousand cubic feet gas—Oakland Gas Co.	2 50
Repairing door check—F. D. Morrill	2 75
Fifteen sacks sawdust—George C. Pape	3 75
Twenty-two and one half square feet wire cloth—Savage Bros.	1 80
Forty-eight pounds ½-inch rope—J. McClain	7 68
One Yale padlock—A. Erlandsen	1 25
Six pounds paint—J. M. McNamara	60
Solder and coal—J. M. McNamara	50
One half day's labor of two men—J. M. McNamara	3 00
One pair brass hinges and screws—A. Erlandsen	10
One brass hook and eye—A. Erlandsen	05
Two brass rods—A. Erlandsen	75
Three gross screw hooks—A. Erlandsen	1 65
One pair brass hinges and screws—A. Erlandsen	25
One brass lock and two keys—A. Erlandsen	50
One hinge, hasp, and bolts—A. Erlandsen	20
One padlock and two keys—A. Erlandsen	1 00
Repairing roof to North Hall—J. M. McNamara	2 00
Bill of J. M. McNamara for repairing Gymnasium: Forty-five pounds 1½-inch lead pipe, one sewer trap, three pounds solder, two hose bibs, five inches water pipe, nine fittings, one day's labor of two men.	13 00
Repairs in North Hall—J. M. McNamara	5 50
New bottom in Gymnasium tank—J. M. McNamara	12 00
Fitting three keys—A. Erlandsen	75

Three joints 5-inch stove-pipe, one elbow, one collar, and labor—J. M. McNamara	\$1 25
One reducer—J. M. McNamara	10
One chair casting—G. H. Fuller Desk Co.	1 00

\$6,780 29

To University Printing Office.

One and three fourths reams paper—Blake, Moffitt & Towne	\$12 00
Expressage, month of June—Patterson & Co.	1 50
Paper—Tatum & Bowen	5 00
Grinding knife—Tatum & Bowen	1 25
Paper—Blake, Moffitt & Towne	35 32
Type—Tatum & Bowen	2 00
Type—Tatum & Bowen	20 05
Expressage—Patterson & Co.	1 50
Two lye brushes—E. J. Shattuck & Co.	70
Two benzine brushes—E. J. Shattuck & Co.	60
One pound blue black—E. J. Shattuck & Co.	2 00
One pound job black—E. J. Shattuck & Co.	2 00
Three half-medium rollers—E. J. Shattuck & Co.	3 00
Three quarter-medium rollers—E. J. Shattuck & Co.	2 25
Three eighth-medium rollers—E. J. Shattuck & Co.	1 50
Two brayers—E. J. Shattuck & Co.	1 00
One hundred sheets Bristol board—Blake, Moffitt & Towne	6 00
One ream Japanese folio—Blake, Moffitt & Towne	6 72
One ream Whiting folio—Blake, Moffitt & Towne	5 00
Expressage—Patterson & Co.	1 00
One ream 24x38 paper—Blake, Moffitt & Towne	8 00
Two reams folio paper—Blake, Moffitt & Towne	10 00
One hundred sheets Bristol board—Blake, Moffitt & Towne	6 00
Four quires paper—Blake, Moffitt & Towne	75
Grinding knife—Tatum & Bowen	1 25
One brass oiler—Tatum & Bowen	35
Five and one half pounds 10-point sorts—Tatum & Bowen	2 75
Two pounds 8-point sorts—Tatum & Bowen	1 12
Three pounds 12-point sorts—Tatum & Bowen	1 38
Two pounds 6-point sorts—Tatum & Bowen	1 36
Two pounds 6-point sorts—Tatum & Bowen	1 36
Twenty-four feet rule—Tatum & Bowen	2 40
One 8-inch R. K. stick—Tatum & Bowen	1 35
One 6-inch R. K. stick—Tatum & Bowen	1 25
Expressage—Patterson & Co.	1 25
Expressage—Patterson & Co.	50

Bill of Tatum & Bowen for printers' materials:

One font 8-point apollo	\$3 00
One font 10-point apollo	3 25
One font 6-point romanesque	2 25
One font 8-point romanesque	2 00
One font 10-point romanesque	2 50
One font 12-point romanesque	3 00
One font 18-point romanesque	3 50
One font 24-point romanesque	4 00
One font 30-point romanesque	5 10
One font 12-point old style extended	3 65
One font 12-point elzevir italics, lower case	2 00
One font 10-point old style extended, caps and small caps	2 95
One font 10-point gothic condensed, No. 4	3 30
One font 12-point gothic condensed, No. 4	3 65
One font 18-point graphic text	3 60
One font 24-point graphic text	3 95
One font 36-point graphic text	4 55
Thirty-five fancy dashes	3 50
Twenty-four feet rule, 304	2 40
Twenty pounds 2-point leads	3 20

65 35

Recoating six medium rollers—E. J. Shattuck & Co.	4 50
One gallon benzine—E. J. Shattuck & Co.	30
One 1-gallon can—E. J. Shattuck & Co.	30
One pound varnish—E. J. Shattuck & Co.	40
Expressage—Patterson & Co.	50
One Webster's Dictionary—The Bancroft Co.	12 00
One ream S. & S. C. paper—Blake, Moffitt & Towne	8 00
Two hundred and twenty-six sheets marble board—Blake, Moffitt & Towne	13 56
One ream Japanese folio—Blake, Moffitt & Towne	6 72
One hundred and forty sheets cream laid paper—Blake, Moffitt & Towne	15 50

Three thousand envelopes—Blake, Moffitt & Towne	\$5 76
Two reams Japanese folio, cut—Blake, Moffitt & Towne	13 54
One ream Whiting folio, cut—Blake, Moffitt & Towne	5 00
Expressage—Patterson & Co.	75
Twenty-four feet rule—Tatum & Bowen	2 88
Five pounds quotations—Tatum & Bowen	1 50
Four pounds 10-point 2 and 3-em quads—Tatum & Bowen	2 00
Four pounds 12-point 2 and 3-em quads—Tatum & Bowen	1 84
Two pounds 6-point 3-em quads—Tatum & Bowen	1 36
Two pounds 8-point 2 and 3-em quads—Tatum & Bowen	1 12
Two pounds 6-point 3-em leaders—Tatum & Bowen	1 36
One font 10-point elzevir italic—Tatum & Bowen	3 80
One font 8-point superior figures—Tatum & Bowen	1 50
One font 10-point superior figures—Tatum & Bowen	1 56
One font 12-point superior figures—Tatum & Bowen	1 66
One font 6-point algebraic signs—Tatum & Bowen	2 40
One font 8-point algebraic signs—Tatum & Bowen	1 80
One font 10-point algebraic signs—Tatum & Bowen	1 50
One font 6-point latin antique—Tatum & Bowen	2 90
One font 8-point latin antique—Tatum & Bowen	2 96
One font 10-point latin antique—Tatum & Bowen	2 96
One font 12-point latin antique—Tatum & Bowen	2 96
One pair patent news cases—Tatum & Bowen	2 00
Salaries for the year ending June 30, 1891	720 00

\$1,063 65*To Advertising and Printing.*

Advertising entrance examinations—San Francisco "Chronicle"	\$9 80
Advertising entrance examinations—San Francisco "Call"	8 00
Advertising entrance examinations—San Francisco "Bulletin"	11 00
Advertising entrance examinations—Los Angeles "Times-Mirror"	3 30
Advertising entrance examinations—Los Angeles "Herald"	5 00
Advertising entrance examinations—San Francisco "Alta California"	7 00
Advertising entrance examinations—Oakland "Enquirer"	4 00
Advertising entrance examinations—San Francisco "Evening Post"	6 00
Advertising entrance examinations—Los Angeles "Express"	4 75
Advertising entrance examinations—San Francisco "Report"	7 00
Advertising entrance examinations—Oakland "Tribune"	3 60
Printing 100 circulars—The Louis Roesch Co.	3 75
Advertising entrance examinations—H. S. Spaulding	4 00
Advertising entrance examinations—Chico "Chronicle"	2 50
Advertising entrance examinations—Chico "Enterprise"	3 00
Printing entrance examination questions—Bosque Engraving Co.	78 50
Advertising entrance examinations—Grass Valley "Union"	4 00
Notice special meeting of Regents—San Francisco "Call"	1 00
Five hundred demands on Controller—Dutton & Partridge	5 50
Fifty copies payroll—C. A. Murdock & Co.	11 00
Five hundred receipts printed—Dutton & Partridge	2 50
Seventy-five copies Morrill College Aid Act—H. S. Crocker & Co.	10 00
Printing 500 circulars on satin—H. S. Crocker & Co.	30 00
Printing examination papers—C. A. Murdock & Co.	43 00
Two hundred announcements (Mills Professorship)—C. A. Murdock & Co.	8 00

\$276 20*To Telegraphing and Expressage.*

Expressage—Patterson & Co.	\$3 25
Exchange, etc., on warrants, bonds, etc.	25
Telegraphing—Western Union Telegraph Co.	3 37
Expressage—Wells, Fargo & Co.	16 75
Exchange, etc., on warrants, bonds, etc.	4 18
Telegraphing—Western Union Telegraph Co.	1 65
Expressage—Wells, Fargo & Co.	3 75
Telegraphing—Western Union Telegraph Co.	80
Exchange, etc., on warrants, bonds, etc.	6 09
Expressage—Wells, Fargo & Co.	7 80
Exchange on bonds, etc.	21 50
Expressage—Wells, Fargo & Co.	1 20
Telegraphing—Western Union Telegraph Co.	1 50
Expressage—Wells, Fargo & Co.	35
Exchange, collection of bonds	6 96
Expressage—Wells, Fargo & Co.	4 40
Expressage—Patterson & Co.	3 00
Moving safe from San Francisco—F. B. Belcher	50 00
Timber for safe—F. B. Belcher	1 00

Expressage—Wells, Fargo & Co.	\$2 70
Exchange from Sacramento—Louis Sloss, Treasurer	50 17
Exchange on bonds—Louis Sloss, Treasurer	7 93
Expressage—Wells, Fargo & Co.	4 41
Exchange on eastern drafts—Louis Sloss, Treasurer	1 70
Telegrams—Western Union Telegraph Co.	1 86
Commission on money orders—S. W. Backus	20
Exchange on remittance—Louis Sloss, Treasurer	25
Expressage—Patterson & Co.	8 60
Expressage—Wells, Fargo & Co.	6 55
Exchange on drafts—Louis Sloss, Treasurer	42
Telephone—Daggett & Co.	25
Telegram—Western Union Telegraph Co.	57
Exchange on warrants to Sacramento—Louis Sloss, Treasurer	5 31
Telegrams—Western Union Telegraph Co.	4 20
Expressage—Patterson & Co.	8 50
Expressage—Wells, Fargo & Co.	7 80
Commission on money orders—S. W. Backus	30
Commission on money orders—N. B. Byrne	67
Expressage—Patterson & Co.	3 00
Telegraphing—Western Union Telegraph Co.	5 43
Premium on Chicago draft—Anglo-Californian Bank	45
Commission on money orders—N. B. Byrne	47
Expressage—Wells, Fargo & Co.	5 95
Expressage—Wells, Fargo & Co.	13 05
Commission on money orders—N. B. Byrne	31
Exchange on drafts—Louis Sloss, Treasurer	1 00
Exchange on drafts, etc.—Louis Sloss, Treasurer	21 35
Expressage—Patterson & Co.	1 75
Telegram—Western Union Telegraph Co.	1 00
Exchange on Sacramento—Louis Sloss, Treasurer	86 26
Telegrams—Western Union Telegraph Co.	64
Expressage—Patterson & Co.	5 50
Commission on money orders—S. W. Backus	20
Commission on money orders—N. B. Byrne	64
Expressage—Wells, Fargo & Co.	4 95
Expressage—Patterson & Co.	50
Telegrams—Western Union Telegraph Co.	1 49
Expressage—Wells, Fargo & Co.	80 30
Expressage—Patterson & Co.	50
Expressage—Wells, Fargo & Co.	8 20
Commission on money orders—N. B. Byrne	20
Commission on money orders—S. W. Backus	10
Telegrams—Western Union Telegraph Co.	4 05

\$447 48

To Stationery.

One half dozen letter pads—Payot, Upham & Co.	\$1 00
One half dozen note pads—Payot, Upham & Co.	60
One dozen packages treasury blotter—Payot, Upham & Co.	1 75
One box pens—Payot, Upham & Co.	75
One box pens—Payot, Upham & Co.	75
One gross penholders—Payot, Upham & Co.	1 00
Four quarts ink—Payot, Upham & Co.	1 60
One half dozen note pads—Payot, Upham & Co.	38
One half dozen letter pads—Payot, Upham & Co.	75
One dozen pencils—Payot, Upham & Co.	40
One gross Dreka pens—Dutton & Partridge	90
Assorted rubber bands—Dutton & Partridge	5 00
Five balls twine—Dutton & Partridge	1 00
One third gross Dixon's pencils—Dutton & Partridge	1 50
One gross Faber's pencils—Dutton & Partridge	1 00
Four No. 10 records—Dutton & Partridge	2 40
One No. 40 records—Dutton & Partridge	1 00
Two No. 36 records—Dutton & Partridge	1 00
Three quarts ink—Dutton & Partridge	2 25
One quart crimson fluid—Dutton & Partridge	75
One 32-ounce aniline—Dutton & Partridge	1 25
One quart mucilage—Dutton & Partridge	1 00
Three dozen document envelopes—Dutton & Partridge	1 95
Two San Francisco directories—Dutton & Partridge	10 00
One office diary—Payot, Upham & Co.	1 50
One sixth dozen office baskets—Walter Meese	\$2 30
Less 25 per cent.	55
	<u>1 75</u>

Six boxes rubber bands—J. J. Evans.....	\$3 30
Less	30
	<hr/>
One basket—Wing Chung Lung	\$3 00
Bishop's A B C Guide—two copies, one year	85
One record book—Dutton & Partridge.....	5 00
One quarter ream journal paper—Dutton & Partridge.....	1 75
Four boxes paper fasteners—Dutton & Partridge.....	1 80
One cloth record—W. B. Hardy	1 00
One cloth record—W. B. Hardy	1 80
Wrapping paper—H. S. Crocker & Co.	1 00
One half ream journal paper—Dutton & Partridge.....	3 60
One ream foolscap paper—Dutton & Partridge	3 50
Six quarts Underwood's ink—Dutton & Partridge.....	2 75
Two diaries—E. P. Bancroft.....	3 65
One dozen inkstands—Payot, Upham & Co.	4 60
Four waste baskets—Payot, Upham & Co.	3 00
Two quires treasury blotting paper—H. S. Crocker & Co.	4 00
One and one fifth thousand flat head fasteners—H. S. Crocker & Co.	3 00
Three dozen pencils—H. S. Crocker & Co.	1 00
One half dozen letter files—H. S. Crocker & Co.	3 20
One sixth dozen crimson ink—H. S. Crocker & Co.	2 00
One gross rubber bands—H. S. Crocker & Co.	4 50
One copy brush—H. S. Crocker & Co.	40
One ream legal cap—H. S. Crocker & Co.	3 50
Two copy books—H. S. Crocker & Co.	2 60
One banker's outfit—A. S. Barnes & Co.	5 00
Five requisition books—H. S. Crocker & Co.	15 00
One ledger—H. S. Crocker & Co.	2 60
One cash book—H. S. Crocker & Co.	2 60
One journal—H. S. Crocker & Co.	2 60
Lettering same—H. S. Crocker & Co.	1 00
One diary—The Bancroft Co.	1 50
One box pens—Dutton & Partridge	75
Four quires Manilla paper—H. S. Crocker & Co.	1 00
One box pens—Dutton & Partridge.....	1 00

\$147 78*To Postage.*

Postage stamps—N. B. Byrne	\$559 00
Five hundred postal cards—N. B. Byrne	5 00
Twenty-five 1-cent wrappers—N. B. Byrne	25

\$564 25*To Incidental Expenses.*

Renewal of Secretary's bond—Pacific Surety Co.	\$50 00
Renewal of Assistant Secretary's bond—Pacific Surety Co.	50 00
Rent of Regents' room—G. Lambert, Agent.....	30 00
Clerical work—W. C. Allen	21 75
Clerical work—W. C. Allen	12 45
Rent of Regents' room, August and September—G. Lambert, Agent.....	60 00
Janitor for Regents' room, August and September—G. Lambert, Agent.....	8 00
Type writing copies—Runge & Elliot.....	1 70
Clerical services—W. C. Allen	4 10
Rent of Regents' room, from October 1, 1890, to June 30, 1891.....	270 00
Janitor for Regents' room, from October 1, 1890, to June 30, 1891.....	36 00
Type writing—Matt. Clarken	50
Rubber stamp—C. A. Klinkner & Co.	50
Rubber stamp—C. A. Klinkner & Co.	25
Notary's fees—J. R. Little.....	1 00
Notary's fees—J. W. Cook.....	1 00
Funeral expenses of Prof. John Le Conte—A. Brown	382 00
One stamp—C. A. Klinkner & Co.	50
Two stamps—L. E. Alexander & Co.	1 00
Clerical service in Recorder's office—S. M. Hardy	12 00
Clerical service in Recorder's office—C. H. Bentley.....	13 00

\$955 75*To College Celebrations.*

Music for Commencement—Fifth Artillery Regiment Band.....	\$125 00
Night work—A. Edgar	4 00
Night work—James Tait	4 00
Four pieces ribbon for diplomas—O'Connor, Moffatt & Co.	9 60
Writing diplomas—T. R. Southern	23 50
Carriage hire—H. M. Waterbury	11 00

One piece ribbon—Kohlberg, Strauss & Frohman	82 75
Twelve pieces gilt-edge ribbon—Schweitzer & Co.	24 00
Music on Charter Day—Noah Brandt's Orchestra	41 50
Three hundred and fifty dance cards—Brunt & Co.	8 50
Five small ribbon bows—Brunt & Co.	
Fifty diplomas on parchment—Schmidt Label Co.	75 00
Engrossing fifty-four diplomas—T. R. Southern	27 00
Stationery, engraving, printing, etc.—Jos. W. Flynn	45 70

\$401 55

To Official and Lecturing Expenses.

Traveling expenses of Secretary	\$61 25
Traveling expenses of Assistant Secretary	21 25
Traveling expenses of Clerk	1 55
Traveling expenses of Professor Putzker	67 30
Traveling expenses of Professor Stringham	86 50
Traveling expenses of Professor Greene	23 25
Traveling expenses of Professor Jones	99 90
Traveling expenses of Professor Slate	167 05
Traveling expenses of Professor Bacon	105 30
Traveling expenses of Professor Gayley	120 00
Traveling expenses of Professor Lange	44 80
Traveling expenses of Professor Edwards	40 30
Traveling expenses of G. M. Richardson	82 15
Traveling expenses of M. W. Haskell	26 70
Traveling expenses of Professor Flagg	21 25
Traveling expenses of M. E. Letts	69 50
Traveling expenses of J. D. Layman	22 80
Traveling expenses of J. H. Gray, Jr.	27 25
Traveling expenses of J. B. Clarke	19 70
Traveling expenses of J. P. Baudin	3 75
Traveling expenses of Frederick Iddins	1 65

\$1,113 30

To Water Supply.

Prospecting for water—H. Linderman	\$461 00
Labor for month of June	2 00
Prospecting for water—H. Linderman	290 00
Twenty-two feet 6-inch pipe—H. Linderman	6 60
Labor for month of July	2 00
Labor for month of August	2 00
Prospecting for water—H. Linderman	242 40
Labor for month of September	2 00
Labor for month of October	2 00
Labor for month of November	2 00
Advertisement for bids—San Francisco "Chronicle"	28 00
Advertisement for bids—San Francisco "Bulletin"	12 00
Labor for month of December	2 00
Labor for month of January	2 00
Work on tunnel contract—W. C. Giles	100 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of February	2 00
Work on tunnel contract—W. C. Giles	100 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of March	2 00
Work on tunnel contract—W. C. Giles	100 00
Labor for month of April	2 00
Final payment on tunnel contract—W. C. Giles	612 50
Sinking a well twenty-five feet deep—H. Linderman	50 00
Timbering twenty-two feet—H. Linderman	11 00
Two days' labor—H. Linderman	10 00

\$2,245 50

To Insurance.

Insurance at Lick Observatory—J. C. Mitchell & Son	\$210 75
Insurance on Chemical Laboratory—J. C. Mitchell & Son	285 87

\$496 62

Amount reserved for permanent improvements	\$10,000 00
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RECAPITULATION.

Receipts.

By cash on Controller's warrants..... \$102,434 52

Disbursements.

To Department of Lick Observatory.....	\$19,518 17
To Department of Mineralogy.....	258 61
To Department of Botany.....	427 35
To Department of Biology.....	267 80
To Department of Physics.....	1,667 12
To Department of Civil Engineering.....	12,273 51
To Department of Physical Culture.....	3,935 00
To Museum.....	2,186 98
To Library.....	5,702 63
To College of Chemistry.....	17,557 31
To University Site Improvements.....	13,377 32
To fuel.....	820 85
To equipment and repairs.....	6,730 29
To University Printing Office.....	1,063 65
To advertising and printing.....	278 20
To telegraphing and expressage.....	447 48
To stationery.....	147 78
To postage.....	564 25
To incidental expenses.....	955 75
To college celebrations.....	401 55
To official and lecturing expenses.....	1,113 30
To water supply.....	2,245 50
To insurance.....	496 62
To amount reserved for permanent improvements.....	10,000 00
	<u>\$102,434 52</u>



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